

**VOLUME I  
PERFORMANCE FLIGHT TESTING**

**APPENDIX B  
U. S. STANDARD ATMOSPHERE  
ALTITUDE, TEMPERATURE,  
PRESSURE AND DENSITY**

**19970116 076**

**DTIC QUALITY INSPECTED 4**

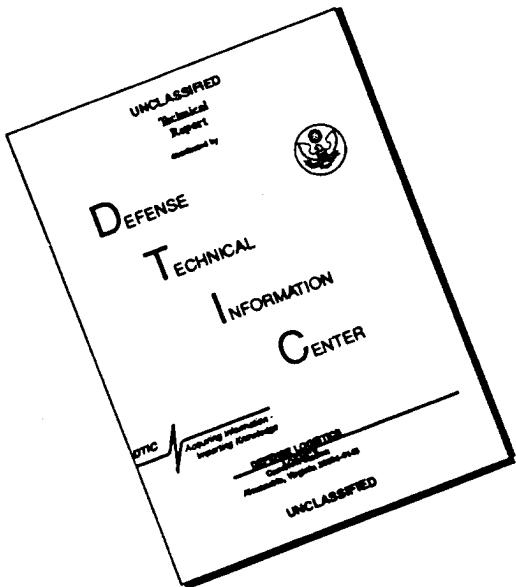
**1962**

**USAF TEST PILOT SCHOOL  
EDWARDS AFB, CA**

**DISTRIBUTION STATEMENT A**

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APPENDIX B  
U.S. STANDARD ATMOSPHERE, 1962  
Altitude, Temperature, Pressure, and Density

ADOPTED PRIMARY CONSTANTS

| Symbol   | Units  |
|----------|--|
| $p_0$    | $2116.22 \text{ lbf ft}^{-2}$                              |
| $\rho_0$ | $0.076474 \text{ lb ft}^{-3}$                              |
| $T_0$    | $15\text{ }^{\circ}\text{C}; 59.0\text{ }^{\circ}\text{F}$ |
| $G_0$    | $32.1741 \text{ ft sec}^{-2}$                              |
| $R^*$    | $1545.31 \text{ lbf R}^{-1} \text{ lb-mol}^{-1}$           |
| $Z$      | Tapeline Altitude ft                                       |
| $H$      | Geopotential Altitude ft                                   |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |        |        | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|--------|--------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F  | t, °C  | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| -1000    | -1000 | 52.236      | 62.566 | 16.981 | 105041 + 3  | 3.10185 + 1 | 1.03687 + 0     | 7.8737 - 2                | 1.0296 + 0            |
| -900     | -900  | 52.180      | 62.210 | 16.763 | 104664      | 3.08073     | 1.03285         | 7.8508                    | 1.0266                |
| -800     | -800  | 52.122      | 61.953 | 16.545 | 104289      | 3.07985     | 1.02895         | 7.8281                    | 1.0236                |
| -700     | -700  | 52.063      | 61.695 | 16.327 | 103914      | 3.08089     | 1.02594         | 7.8053                    | 1.0206                |
| -600     | -600  | 52.003      | 61.440 | 16.109 | 103541      | 3.06757     | 1.02187         | 7.7826                    | 1.0177                |
| -500     | -500  | 52.043      | 61.783 | 15.891 | 103169      | 3.04659     | 1.01880         | 7.7598                    | 1.0147                |
| -400     | -400  | 52.086      | 62.426 | 15.672 | 102798      | 3.03563     | 1.01564         | 7.7373                    | 1.0118                |
| -300     | -300  | 51.970      | 62.070 | 15.454 | 102426      | 3.02471     | 1.01259         | 7.7145                    | 1.0088                |
| -200     | -200  | 51.853      | 59.713 | 15.236 | 102056      | 3.01381     | 1.00952         | 7.6923                    | 1.0059                |
| -100     | -100  | 51.827      | 58.357 | 15.018 | 101682      | 3.00295     | 1.00652         | 7.6698                    | 1.0029                |
| 0        | 0     | 51.870      | 59.000 | 15.000 | 101325 + 3  | 2.99213 + 1 | 1.00000 + 0     | 7.6474 - 2                | 1.0000 + 0            |
| 100      | 100   | 51.831      | 58.643 | 14.882 | 100959      | 2.98133     | 9.98391 - 1     | 7.6251                    | 9.9708 - 1            |
| 200      | 200   | 51.787      | 58.287 | 14.664 | 100586      | 2.97056     | 9.92793         | 7.6028                    | 9.9416                |
| 300      | 300   | 51.740      | 57.930 | 14.446 | 100221      | 2.95983     | 9.86208         | 7.5808                    | 9.9125                |
| 400      | 400   | 51.724      | 57.574 | 14.228 | 9.98489 + 2 | 2.94913     | 9.85529         | 7.5583                    | 9.8835                |
| 500      | 500   | 51.687      | 57.217 | 14.008 | 9.96075     | 2.93846     | 9.82053         | 7.5362                    | 9.8545                |
| 600      | 600   | 51.650      | 56.860 | 13.811 | 9.91472     | 2.92782     | 9.78507         | 7.5141                    | 9.8256                |
| 700      | 700   | 51.617      | 56.504 | 13.613 | 9.87880     | 2.91721     | 9.74981         | 7.4920                    | 9.7968                |
| 800      | 800   | 51.581      | 56.147 | 13.415 | 9.84298     | 2.90663     | 9.71428         | 7.4700                    | 9.7680                |
| 900      | 900   | 51.540      | 55.790 | 13.217 | 9.80726     | 2.89608     | 9.67901         | 7.4480                    | 9.7393                |
| 1000     | 1000  | 51.510      | 55.424 | 13.019 | 9.77105 + 2 | 2.88557 + 1 | 9.64387 - 1     | 7.4281 - 2                | 9.7108 - 1            |
| 1100     | 1100  | 51.474      | 55.077 | 12.821 | 9.73615     | 2.87508     | 9.60863         | 7.4043                    | 9.6821                |
| 1200     | 1200  | 51.439      | 54.721 | 12.623 | 9.70075     | 2.86463     | 9.57380         | 7.3825                    | 9.6535                |
| 1300     | 1300  | 51.404      | 54.364 | 12.424 | 9.66545     | 2.85421     | 9.53805         | 7.3607                    | 9.6251                |
| 1400     | 1400  | 51.367      | 54.007 | 12.226 | 9.63026     | 2.84382     | 9.50433         | 7.3390                    | 9.5967                |
| 1500     | 1500  | 51.332      | 53.661 | 12.028 | 9.59617     | 2.83345     | 9.46970         | 7.3174                    | 9.5684                |
| 1600     | 1600  | 51.294      | 53.304 | 11.830 | 9.56109     | 2.82312     | 9.43515         | 7.2957                    | 9.5401                |
| 1700     | 1700  | 51.268      | 52.938 | 11.632 | 9.52531     | 2.81282     | 9.40075         | 7.2742                    | 9.5119                |
| 1800     | 1800  | 51.231      | 52.581 | 11.434 | 9.46053     | 2.80255     | 9.36643         | 7.2527                    | 9.4838                |
| 1900     | 1900  | 51.184      | 52.224 | 11.236 | 9.45598     | 2.79231     | 9.33221         | 7.2312                    | 9.4557                |
| 2000     | 2000  | 51.153      | 51.868 | 11.038 | 9.42129 + 2 | 2.78210 + 1 | 9.29808 - 1     | 7.2098 - 2                | 9.4277 - 1            |
| 2100     | 2100  | 51.181      | 51.511 | 10.839 | 9.39552     | 2.77193     | 9.26407         | 7.1884                    | 9.3998                |
| 2200     | 2200  | 51.054      | 51.154 | 10.641 | 9.36245     | 2.76178     | 9.23015         | 7.1671                    | 9.3719                |
| 2300     | 2300  | 51.046      | 50.798 | 10.443 | 9.31818     | 2.75165     | 9.19833         | 7.1458                    | 9.3441                |
| 2400     | 2400  | 51.011      | 50.441 | 10.245 | 9.28402     | 2.74157     | 9.16282         | 7.1246                    | 9.3164                |
| 2500     | 2500  | 50.975      | 50.085 | 10.047 | 9.24988     | 2.73151     | 9.12900         | 7.1034                    | 9.2887                |
| 2600     | 2600  | 50.939      | 49.728 | 9.849  | 9.21600     | 2.72148     | 9.08648         | 7.0823                    | 9.2610                |
| 2700     | 2700  | 50.891      | 49.371 | 9.651  | 9.18214     | 2.71148     | 9.05207         | 7.0612                    | 9.2335                |
| 2800     | 2800  | 50.848      | 49.015 | 9.453  | 9.14838     | 2.70152     | 9.01905         | 7.0402                    | 9.2080                |
| 2900     | 2900  | 50.839      | 48.658 | 9.256  | 9.11472     | 2.69158     | 9.08663         | 7.0192                    | 9.1785                |
| 3000     | 3000  | 50.797      | 48.302 | 9.058  | 9.08118 + 2 | 2.68157 + 1 | 9.05241 - 1     | 6.9963 - 2                | 9.1512 - 1            |
| 3100     | 3100  | 50.745      | 47.945 | 8.858  | 9.04770     | 2.67179     | 9.22009         | 6.9774                    | 9.1239                |
| 3200     | 3200  | 50.728      | 47.588 | 8.660  | 9.01435     | 2.66194     | 9.28647         | 6.9568                    | 9.0986                |
| 3300     | 3301  | 50.692      | 47.232 | 8.462  | 9.98109     | 2.65211     | 9.25324         | 6.93558                   | 9.0884                |
| 3400     | 3401  | 50.656      | 46.875 | 8.264  | 9.94793     | 2.64222     | 9.22092         | 6.9150                    | 9.0623                |
| 3500     | 3501  | 50.618      | 46.518 | 8.066  | 9.91487     | 2.63236     | 9.18929         | 6.89443                   | 9.0452                |
| 3600     | 3601  | 50.582      | 46.162 | 7.868  | 9.88191     | 2.62238     | 9.15876         | 6.8737                    | 9.0282                |
| 3700     | 3701  | 50.545      | 45.805 | 7.670  | 9.84905     | 2.61212     | 9.12833         | 6.8531                    | 9.0113                |
| 3800     | 3801  | 50.519      | 45.448 | 7.471  | 9.81628     | 2.60206     | 9.09100         | 6.83325                   | 9.0044                |
| 3900     | 3901  | 50.476      | 45.082 | 7.273  | 9.78362     | 2.59200     | 9.06076         | 6.8120                    | 9.0076                |
| 4000     | 4001  | 50.440      | 44.735 | 7.075  | 9.75105 + 2 | 2.58218 + 1 | 9.03061 - 1     | 6.7918 - 2                | 9.0009 - 1            |
| 4100     | 4101  | 50.408      | 44.379 | 6.877  | 9.71058     | 2.57240     | 9.00467         | 6.7712                    | 8.8542                |
| 4200     | 4201  | 50.382      | 44.022 | 6.679  | 9.66821     | 2.56264     | 9.57295         | 6.7508                    | 8.8275                |
| 4300     | 4301  | 50.335      | 43.665 | 6.481  | 9.62393     | 2.55281     | 9.54077         | 6.7305                    | 8.8010                |
| 4400     | 4401  | 50.297      | 43.308 | 6.283  | 9.62176     | 2.54200     | 9.50801         | 6.7102                    | 8.7745                |
| 4500     | 4501  | 50.262      | 42.952 | 6.085  | 9.58068     | 2.53203     | 9.47735         | 6.6890                    | 8.7480                |
| 4600     | 4601  | 50.226      | 42.596 | 5.888  | 9.55789     | 2.52270     | 9.44579         | 6.6680                    | 8.7216                |
| 4700     | 4701  | 50.190      | 42.239 | 5.690  | 9.52381     | 2.51267     | 9.41432         | 6.6487                    | 8.6953                |
| 4800     | 4801  | 50.152      | 41.882 | 5.492  | 9.48402     | 2.50268     | 9.38394         | 6.6286                    | 8.6680                |
| 4900     | 4901  | 50.116      | 41.526 | 5.294  | 9.44532     | 2.49268     | 9.35366         | 6.6086                    | 8.6428                |
| 5000     | 5001  | 50.080      | 41.169 | 5.096  | 9.40722 + 2 | 2.48269 + 1 | 9.32048 - 1     | 6.5886 - 2                | 8.6107 - 1            |
| 5100     | 5101  | 50.043      | 40.813 | 4.898  | 9.36922     | 2.46269     | 9.29009         | 6.5686                    | 8.5805                |
| 5200     | 5201  | 50.126      | 40.456 | 4.698  | 9.33781     | 2.47101     | 9.25959         | 6.5487                    | 8.5646                |
| 5300     | 5301  | 49.769      | 40.099 | 4.498  | 9.30880     | 2.46177     | 9.22748         | 6.5290                    | 8.5386                |
| 5400     | 5401  | 49.413      | 39.743 | 4.298  | 9.28028     | 2.45205     | 9.19887         | 6.5101                    | 8.5127                |
| 5500     | 5501  | 49.056      | 39.386 | 4.098  | 9.25148     | 2.44238     | 9.16986         | 6.4903                    | 8.4909                |
| 5600     | 5601  | 48.699      | 39.029 | 3.898  | 9.23213     | 2.43260     | 9.13934         | 6.4708                    | 8.4611                |
| 5700     | 5701  | 48.343      | 38.673 | 3.697  | 9.21220     | 2.42288     | 9.10901         | 6.4508                    | 8.4354                |
| 5800     | 5801  | 48.086      | 38.316 | 3.498  | 9.18136     | 2.41295     | 9.07437         | 6.4313                    | 8.4087                |
| 5900     | 5901  | 47.829      | 37.960 | 3.291  | 9.15061     | 2.40297     | 9.04403         | 6.4117                    | 8.3841                |
| 6000     | 6001  | 47.573      | 37.603 | 3.093  | 9.11995 + 2 | 2.39293 + 1 | 9.01377 - 1     | 6.3822 - 2                | 8.3586 - 1            |
| 6100     | 6101  | 47.316      | 37.246 | 2.895  | 9.08940     | 2.38295     | 9.08355         | 6.3727                    | 8.3331                |
| 6200     | 6201  | 46.959      | 36.889 | 2.697  | 9.05893     | 2.37298     | 9.05355         | 6.3532                    | 8.3077                |
| 6300     | 6301  | 46.602      | 36.532 | 2.498  | 9.02838     | 2.36298     | 9.02357         | 6.3345                    | 8.2823                |
| 6400     | 6401  | 46.247      | 36.177 | 2.298  | 9.00828     | 2.35298     | 9.00357         | 6.3146                    | 8.2570                |
| 6500     | 6501  | 46.013      | 35.820 | 2.094  | 9.98798     | 2.34298     | 9.00348         | 6.2950                    | 8.2318                |
| 6600     | 6601  | 45.777      | 35.467 | 1.894  | 9.96768     | 2.33298     | 9.00348         | 6.2750                    | 8.2086                |
| 6700     | 6701  | 45.540      | 35.110 | 1.694  | 9.94738     | 2.32298     | 9.00348         | 6.2557                    | 8.1815                |
| 6800     | 6801  | 45.303      | 34.753 | 1.494  | 9.92708     | 2.31298     | 9.00348         | 6.2354                    | 8.1584                |
| 6900     | 6901  | 45.066      | 34.396 | 1.294  | 9.90678     | 2.30298     | 9.00348         | 6.2154                    | 8.1314                |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |        |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|--------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F  | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 7000     | 7002  | 483.707     | 34.037 | 1.132   | 7.81853 + 2 | 2.30861 + 1 | 7.71629 - 1     | 6.1993 - 2                | 8.1064 - 1            |
| 7100     | 7102  | 483.350     | 33.680 | 0.923   | 7.78369     | 2.30006     | 7.88704         | 6.1803                    | 8.0816                |
| 7200     | 7202  | 482.994     | 33.324 | 0.715   | 7.75003     | 2.29123     | 7.85788         | 6.1613                    | 8.0567                |
| 7300     | 7302  | 482.637     | 32.967 | 0.507   | 7.72293     | 2.28246     | 7.82861         | 6.1424                    | 8.0320                |
| 7400     | 7402  | 482.280     | 32.610 | 0.299   | 7.70023     | 2.27367     | 7.79933         | 6.1235                    | 8.0071                |
| 7500     | 7502  | 481.924     | 32.254 | 0.191   | 7.67125     | 2.26483     | 7.77064         | 6.1046                    | 7.9826                |
| 7600     | 7602  | 481.567     | 31.897 | -0.067  | 7.64207     | 2.25607     | 7.74214         | 6.0854                    | 7.9560                |
| 7700     | 7702  | 481.211     | 31.541 | -0.286  | 7.61286     | 2.24721     | 7.71362         | 6.0670                    | 7.9334                |
| 7800     | 7802  | 480.854     | 31.184 | -0.453  | 7.58387     | 2.23835     | 7.68486         | 6.0483                    | 7.9090                |
| 7900     | 7902  | 480.497     | 30.827 | -0.651  | 7.55608     | 2.23101     | 7.65606         | 6.0296                    | 7.8845                |
| 8000     | 8002  | 480.141     | 30.471 | -0.850  | 7.52823 + 2 | 2.22229 + 1 | 7.42781 - 1     | 6.0110 - 2                | 7.8602 - 1            |
| 8100     | 8102  | 480.784     | 30.114 | -1.048  | 7.49750     | 2.21401     | 7.39846         | 5.9924                    | 7.8359                |
| 8200     | 8202  | 480.427     | 29.757 | -1.246  | 7.46685     | 2.20585     | 7.37118         | 5.9739                    | 7.8116                |
| 8300     | 8302  | 480.071     | 29.401 | -1.444  | 7.44029     | 2.19712     | 7.34300         | 5.9554                    | 7.7874                |
| 8400     | 8402  | 480.714     | 29.044 | -1.642  | 7.41182     | 2.18871     | 7.31480         | 5.9369                    | 7.7633                |
| 8500     | 8502  | 480.358     | 28.688 | -1.840  | 7.38344     | 2.18033     | 7.28669         | 5.9185                    | 7.7392                |
| 8600     | 8602  | 480.001     | 28.331 | -2.038  | 7.35514     | 2.17197     | 7.25886         | 5.9001                    | 7.7152                |
| 8700     | 8702  | 479.544     | 27.974 | -2.236  | 7.32684     | 2.16354     | 7.23113         | 5.8818                    | 7.6912                |
| 8800     | 8802  | 479.288     | 27.618 | -2.435  | 7.29862     | 2.15534     | 7.20338         | 5.8633                    | 7.6673                |
| 8900     | 8902  | 478.931     | 27.261 | -2.633  | 7.27079     | 2.14705     | 7.17571         | 5.8453                    | 7.6434                |
| 9000     | 9002  | 478.575     | 26.905 | -2.831  | 7.24285 + 2 | 2.13881 + 1 | 7.14813 - 1     | 5.8271 - 2                | 7.6196 - 1            |
| 9100     | 9102  | 478.218     | 26.548 | -3.029  | 7.21499     | 2.13059     | 7.12084         | 5.8089                    | 7.5959                |
| 9200     | 9202  | 478.861     | 26.191 | -3.227  | 7.18722     | 2.12238     | 7.08323         | 5.7908                    | 7.5722                |
| 9300     | 9302  | 478.505     | 25.835 | -3.425  | 7.15954     | 2.11421     | 7.06581         | 5.7727                    | 7.5486                |
| 9400     | 9402  | 478.148     | 25.478 | -3.623  | 7.13194     | 2.10606     | 7.03868         | 5.7547                    | 7.5250                |
| 9500     | 9502  | 478.791     | 25.121 | -3.821  | 7.10443     | 2.09794     | 7.01152         | 5.7367                    | 7.5015                |
| 9600     | 9602  | 478.435     | 24.765 | -4.020  | 7.07700     | 2.08984     | 6.98446         | 5.7188                    | 7.4781                |
| 9700     | 9702  | 478.078     | 24.408 | -4.218  | 7.04966     | 2.08177     | 6.95748         | 5.7009                    | 7.4547                |
| 9800     | 9802  | 478.722     | 24.052 | -4.416  | 7.02241     | 2.07372     | 6.93058         | 5.6830                    | 7.4313                |
| 9900     | 9902  | 478.365     | 23.695 | -4.614  | 6.99524     | 2.06569     | 6.90377         | 5.6652                    | 7.4080                |
| 10000*   | 10002 | 478.008     | 23.338 | -4.812  | 6.96816 + 2 | 2.05770 + 1 | 6.87704 - 1     | 5.6475 - 2                | 7.3848 - 1            |
| 10100    | 10102 | 478.652     | 22.982 | -5.010  | 6.94116     | 2.04972     | 6.85604         | 5.6297                    | 7.3616                |
| 10200    | 10202 | 478.296     | 22.625 | -5.208  | 6.91425     | 2.04178     | 6.82393         | 5.6121                    | 7.3385                |
| 10300    | 10302 | 478.939     | 22.269 | -5.406  | 6.88742     | 2.03385     | 6.79736         | 5.5944                    | 7.3154                |
| 10400    | 10402 | 478.582     | 21.912 | -5.604  | 6.86058     | 2.02586     | 6.77086         | 5.5768                    | 7.2924                |
| 10500    | 10502 | 478.225     | 21.555 | -5.803  | 6.83402     | 2.01808     | 6.74466         | 5.5583                    | 7.2695                |
| 10600    | 10602 | 478.069     | 21.199 | -6.001  | 6.80744     | 2.01024     | 6.71842         | 5.5418                    | 7.2466                |
| 10700    | 10702 | 478.512     | 20.842 | -6.199  | 6.78085     | 2.00241     | 6.69229         | 5.5243                    | 7.2237                |
| 10800    | 10802 | 478.155     | 20.485 | -6.397  | 6.75454     | 1.99461     | 6.66621         | 5.5069                    | 7.2009                |
| 10900    | 10902 | 478.799     | 20.129 | -6.595  | 6.72822     | 1.98694     | 6.64023         | 5.4886                    | 7.1782                |
| 11000    | 11002 | 478.442     | 19.772 | -6.793  | 6.70197 + 2 | 1.97708 + 1 | 6.61433 - 1     | 5.4721 - 2                | 7.1556 - 1            |
| 11100    | 11102 | 478.085     | 19.415 | -6.991  | 6.67581     | 1.97137     | 6.59892         | 5.4548                    | 7.1329                |
| 11200    | 11202 | 478.729     | 19.058 | -7.189  | 6.64974     | 1.96537     | 6.58278         | 5.4378                    | 7.1103                |
| 11300    | 11302 | 478.372     | 18.702 | -7.386  | 6.62374     | 1.95939     | 6.55713         | 5.4203                    | 7.0878                |
| 11400    | 11402 | 478.016     | 18.346 | -7.585  | 6.59783     | 1.95334     | 6.51155         | 5.4032                    | 7.0653                |
| 11500    | 11502 | 477.659     | 17.989 | -7.784  | 6.57200     | 1.94671     | 6.48808         | 5.3860                    | 7.0429                |
| 11600    | 11602 | 477.303     | 17.633 | -7.982  | 6.54425     | 1.93911     | 6.46085         | 5.3689                    | 7.0206                |
| 11700    | 11702 | 476.946     | 17.276 | -8.180  | 6.52059     | 1.93253     | 6.43352         | 5.3519                    | 6.9983                |
| 11800    | 11802 | 476.589     | 16.919 | -8.378  | 6.49690     | 1.91797     | 6.41087         | 5.3340                    | 6.9761                |
| 11900    | 11902 | 476.233     | 16.563 | -8.576  | 6.47650     | 1.91044     | 6.38400         | 5.3179                    | 6.9539                |
| 12000    | 12002 | 475.876     | 16.206 | -8.774  | 6.44408 + 2 | 1.90294 + 1 | 6.35981 - 1     | 5.3010 - 2                | 6.9317 - 1            |
| 12100    | 12102 | 475.519     | 15.849 | -8.973  | 6.41874     | 1.89446     | 6.32480         | 5.2841                    | 6.9097                |
| 12200    | 12202 | 475.163     | 15.493 | -9.171  | 6.39348     | 1.88798     | 6.28897         | 5.2673                    | 6.8876                |
| 12300    | 12302 | 474.806     | 15.136 | -9.369  | 6.36830     | 1.88056     | 6.25305         | 5.2505                    | 6.8657                |
| 12400    | 12402 | 474.449     | 14.780 | -9.567  | 6.34320     | 1.87315     | 6.22805         | 5.2237                    | 6.8437                |
| 12500    | 12502 | 474.093     | 14.423 | -9.765  | 6.31818     | 1.86676     | 6.20356         | 5.2010                    | 6.8219                |
| 12600    | 12602 | 473.736     | 14.066 | -9.963  | 6.29324     | 1.86038     | 6.17863         | 5.1803                    | 6.8001                |
| 12700    | 12702 | 473.380     | 13.710 | -10.161 | 6.26838     | 1.85405     | 6.15861         | 5.1637                    | 6.7785                |
| 12800    | 12802 | 473.023     | 13.353 | -10.359 | 6.24380     | 1.84374     | 6.14198         | 5.1471                    | 6.7566                |
| 12900    | 12902 | 472.667     | 12.997 | -10.557 | 6.21860     | 1.83844     | 6.12798         | 5.1298                    | 6.7349                |
| 13000    | 13002 | 472.310     | 12.640 | -10.756 | 6.19428 + 2 | 1.82917 + 1 | 6.11133 - 1     | 5.11400 - 2               | 6.7133 - 1            |
| 13100    | 13102 | 471.953     | 12.283 | -10.954 | 6.16874     | 1.82086     | 6.09886         | 5.1175                    | 6.6918                |
| 13200    | 13202 | 471.597     | 11.927 | -11.152 | 6.14328     | 1.81470     | 6.08498         | 5.1011                    | 6.6703                |
| 13300    | 13302 | 471.240     | 11.570 | -11.350 | 6.12089     | 1.80759     | 6.06498         | 5.0847                    | 6.6489                |
| 13400    | 13402 | 470.883     | 11.213 | -11.548 | 6.09659     | 1.80033     | 6.04988         | 5.0683                    | 6.6275                |
| 13500    | 13502 | 470.527     | 10.857 | -11.746 | 6.07236     | 1.79317     | 6.03268         | 5.0539                    | 6.6061                |
| 13600    | 13602 | 470.170     | 10.500 | -11.944 | 6.04821     | 1.78693     | 5.99973         | 5.0357                    | 6.5849                |
| 13700    | 13702 | 469.814     | 10.144 | -12.142 | 6.02413     | 1.77988     | 5.94533         | 5.0198                    | 6.5638                |
| 13800    | 13802 | 469.457     | 9.787  | -12.341 | 6.00014     | 1.77184     | 5.89788         | 5.0033                    | 6.5434                |
| 13900    | 13902 | 469.100     | 9.430  | -12.539 | 5.97622     | 1.76378     | 5.85097         | 4.9871                    | 6.5213                |
| 14000    | 14002 | 468.744     | 9.074  | -12.737 | 5.95238 + 2 | 1.75774 + 1 | 5.81405 - 1     | 4.9710 - 2                | 6.5003 - 1            |
| 14100    | 14102 | 468.387     | 8.717  | -12.936 | 5.92382     | 1.75072     | 5.76100         | 4.9549                    | 6.4792                |
| 14200    | 14202 | 468.031     | 8.361  | -13.133 | 5.89483     | 1.74373     | 5.71772         | 4.9388                    | 6.4593                |
| 14300    | 14302 | 467.674     | 8.004  | -13.331 | 5.86133     | 1.73675     | 5.69442         | 4.9229                    | 6.4373                |
| 14400    | 14402 | 467.317     | 7.647  | -13.529 | 5.83779     | 1.72981     | 5.78119         | 4.9070                    | 6.4165                |
| 14500    | 14502 | 466.961     | 7.291  | -13.727 | 5.81434     | 1.72286     | 5.75884         | 4.8910                    | 6.3967                |
| 14600    | 14602 | 466.604     | 6.934  | -13.926 | 5.79106     | 1.71587     | 5.73407         | 4.8752                    | 6.3749                |
| 14700    | 14702 | 466.247     | 6.577  | -14.124 | 5.77865     | 1.70889     | 5.71197         | 4.8608                    | 6.3543                |
| 14800    | 14802 | 465.891     | 6.221  | -14.322 | 5.76442     | 1.70223     | 5.69004         | 4.8458                    | 6.3333                |
| 14900    | 14902 | 465.534     | 5.864  | -14.520 | 5.74127     | 1.69449     | 5.66939         | 4.8278                    | 6.3129                |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |  |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|--|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |  |
| 15000    | 15011 | 465.178     | 5.508   | -14.718 | 5.71819 + 2 | 1.68858 + 1 | 5.84342 - 1     | 4.8120 - 2                | 6.2924 - 1            |  |
| 15100    | 15111 | 464.571     | 5.151   | -14.916 | 5.85719     | 1.69179     | 5.82071         | 4.7944                    | 6.2719                |  |
| 15200    | 15211 | 464.444     | 4.774   | -15.114 | 5.87736     | 1.67932     | 5.80938         | 4.7827                    | 6.2514                |  |
| 15300    | 15311 | 464.108     | 4.438   | -15.312 | 5.84941     | 1.68827     | 5.77923         | 4.7651                    | 6.2310                |  |
| 15400    | 15411 | 463.751     | 4.081   | -15.510 | 5.82963     | 1.68154     | 5.75305         | 4.7499                    | 6.2107                |  |
| 15500    | 15512 | 463.398     | 3.725   | -15.708 | 5.80383     | 1.68484     | 5.73084         | 4.7340                    | 6.1904                |  |
| 15600    | 15612 | 463.038     | 3.368   | -15.907 | 5.78130     | 1.68405     | 5.70871         | 4.7185                    | 6.1701                |  |
| 15700    | 15712 | 462.681     | 3.011   | -15.105 | 5.75874     | 1.68150     | 5.68805         | 4.7031                    | 6.1498                |  |
| 15800    | 15812 | 462.325     | 2.655   | -14.303 | 5.73388     | 1.68286     | 5.66777         | 4.6877                    | 6.1298                |  |
| 15900    | 15912 | 461.968     | 2.298   | -14.501 | 5.71385     | 1.68284     | 5.64175         | 4.6723                    | 6.1087                |  |
| 16000    | 16012 | 461.611     | 1.941   | -16.000 | 5.69152 + 2 | 1.68164 + 1 | 5.61971 - 1     | 4.6570 - 2                | 6.0886 - 1            |  |
| 16100    | 16112 | 461.255     | 1.588   | -16.297 | 5.66925     | 1.65107     | 5.59773         | 4.6417                    | 6.0696                |  |
| 16200    | 16213 | 460.898     | 1.228   | -17.086 | 5.64707     | 1.66852     | 5.57584         | 4.6284                    | 6.0497                |  |
| 16300    | 16313 | 460.542     | 0.872   | -17.284 | 5.62486     | 1.66199     | 5.55401         | 4.6112                    | 6.0298                |  |
| 16400    | 16413 | 460.185     | 0.515   | -17.482 | 5.60291     | 1.65648     | 5.53226         | 4.5951                    | 6.0099                |  |
| 16500    | 16513 | 459.828     | 0.158   | -17.680 | 5.58084     | 1.65889     | 5.51057         | 4.5808                    | 5.9801                |  |
| 16600    | 16613 | 458.472     | -0.198  | -17.878 | 5.55904     | 1.65253     | 5.28986         | 4.5658                    | 5.9704                |  |
| 16700    | 16713 | 458.115     | -0.555  | -18.086 | 5.53722     | 1.65708     | 5.26742         | 4.5508                    | 5.9507                |  |
| 16800    | 16814 | 458.758     | -0.911  | -18.284 | 5.51546     | 1.66005     | 5.24598         | 4.5357                    | 5.9311                |  |
| 16900    | 16914 | 458.402     | -1.268  | -18.482 | 5.49378     | 1.66325     | 5.22456         | 4.5207                    | 5.9115                |  |
| 17000    | 17014 | 458.045     | -1.625  | -18.680 | 5.27217 + 2 | 1.55687 + 1 | 5.20222 - 1     | 4.5058 - 2                | 5.8919 - 1            |  |
| 17100    | 17114 | 457.589     | -1.981  | -18.879 | 5.25064     | 1.55051     | 5.18197         | 4.4908                    | 5.8724                |  |
| 17200    | 17214 | 457.332     | -2.338  | -19.077 | 5.22917     | 1.54417     | 5.16079         | 4.4780                    | 5.8530                |  |
| 17300    | 17314 | 456.975     | -2.685  | -19.275 | 5.20777     | 1.53785     | 5.13967         | 4.4612                    | 5.8336                |  |
| 17400    | 17415 | 456.619     | -3.051  | -19.473 | 5.18645     | 1.53156     | 5.11863         | 4.4454                    | 5.8142                |  |
| 17500    | 17515 | 456.262     | -3.408  | -19.671 | 5.16519     | 1.52528     | 5.09765         | 4.4316                    | 5.7949                |  |
| 17600    | 17615 | 455.905     | -3.764  | -19.869 | 5.14401     | 1.51943     | 5.07674         | 4.4169                    | 5.7757                |  |
| 17700    | 17715 | 455.549     | -4.121  | -20.067 | 5.12280     | 1.51279     | 5.05591         | 4.4022                    | 5.7565                |  |
| 17800    | 17815 | 455.192     | -4.478  | -20.265 | 5.10185     | 1.50656     | 5.03514         | 4.3876                    | 5.7373                |  |
| 17900    | 17915 | 454.836     | -4.834  | -20.463 | 5.08088     | 1.50038     | 5.01444         | 4.3729                    | 5.7182                |  |
| 18000    | 18016 | 454.479     | -5.191  | -20.662 | 5.05908 + 2 | 1.49421 + 1 | 4.98081 - 1     | 4.3584 - 2                | 5.6891 - 1            |  |
| 18100    | 18116 | 454.122     | -5.547  | -20.860 | 5.03915     | 1.48808     | 4.97225         | 4.3438                    | 5.6801                |  |
| 18200    | 18216 | 453.766     | -5.904  | -21.058 | 5.01838     | 1.48193     | 4.95276         | 4.3293                    | 5.6612                |  |
| 18300    | 18316 | 453.408     | -6.261  | -21.256 | 4.99769     | 1.47582     | 4.93223         | 4.3140                    | 5.6423                |  |
| 18400    | 18416 | 453.053     | -6.617  | -21.454 | 4.97706     | 1.46973     | 4.91198         | 4.3005                    | 5.6234                |  |
| 18500    | 18516 | 452.696     | -6.974  | -21.652 | 4.95661     | 1.46386     | 4.89169         | 4.2861                    | 5.6046                |  |
| 18600    | 18617 | 452.339     | -7.331  | -21.850 | 4.93602     | 1.45781     | 4.87147         | 4.2717                    | 5.5858                |  |
| 18700    | 18717 | 451.983     | -7.687  | -22.048 | 4.91580     | 1.45158     | 4.85122         | 4.2574                    | 5.5671                |  |
| 18800    | 18817 | 451.628     | -8.044  | -22.247 | 4.89525     | 1.44537     | 4.83124         | 4.2431                    | 5.5484                |  |
| 18900    | 18917 | 451.270     | -8.400  | -22.445 | 4.87467     | 1.43958     | 4.81122         | 4.2288                    | 5.5298                |  |
| 19000    | 19017 | 450.913     | -8.757  | -22.643 | 4.85475 + 2 | 1.43381 + 1 | 4.79127 - 1     | 4.2147 - 2                | 5.5112 - 1            |  |
| 19100    | 19118 | 450.556     | -9.114  | -22.841 | 4.83461     | 1.42795     | 4.77139         | 4.2005                    | 5.4927                |  |
| 19200    | 19218 | 450.200     | -9.470  | -23.039 | 4.81453     | 1.42173     | 4.75157         | 4.1864                    | 5.4742                |  |
| 19300    | 19318 | 449.843     | -9.827  | -23.237 | 4.79452     | 1.41582     | 4.73182         | 4.1723                    | 5.4558                |  |
| 19400    | 19418 | 449.486     | -10.184 | -23.435 | 4.77458     | 1.40983     | 4.71214         | 4.1582                    | 5.4374                |  |
| 19500    | 19518 | 449.130     | -10.540 | -23.633 | 4.75470     | 1.40405     | 4.69252         | 4.1442                    | 5.4191                |  |
| 19600    | 19618 | 448.773     | -10.897 | -23.832 | 4.73489     | 1.39821     | 4.67297         | 4.1302                    | 5.4008                |  |
| 19700    | 19719 | 448.417     | -11.233 | -24.030 | 4.71515     | 1.39238     | 4.65340         | 4.1163                    | 5.3826                |  |
| 19800    | 19819 | 448.060     | -11.580 | -24.228 | 4.69547     | 1.38687     | 4.63407         | 4.1024                    | 5.3644                |  |
| 19900    | 19919 | 447.703     | -11.927 | -24.426 | 4.67586     | 1.38078     | 4.61472         | 4.0885                    | 5.3462                |  |
| 20000    | 20019 | 447.347     | -12.323 | -24.624 | 4.65632 + 2 | 1.37501 + 1 | 4.59543 - 1     | 4.0746 - 2                | 5.3281 - 1            |  |
| 20100    | 20119 | 446.990     | -12.680 | -24.822 | 4.63685     | 1.36936     | 4.57621         | 4.0608                    | 5.3101                |  |
| 20200    | 20220 | 446.634     | -13.036 | -25.020 | 4.61743     | 1.36353     | 4.55705         | 4.0471                    | 5.2921                |  |
| 20300    | 20320 | 446.277     | -13.393 | -25.218 | 4.59809     | 1.35782     | 4.53796         | 4.0333                    | 5.2741                |  |
| 20400    | 20420 | 445.920     | -13.750 | -25.416 | 4.57881     | 1.35212     | 4.51884         | 4.0196                    | 5.2562                |  |
| 20500    | 20520 | 445.564     | -14.106 | -25.615 | 4.55980     | 1.34645     | 4.49997         | 4.0080                    | 5.2383                |  |
| 20600    | 20620 | 445.207     | -14.463 | -25.813 | 4.54045     | 1.34079     | 4.48108         | 3.9923                    | 5.2205                |  |
| 20700    | 20721 | 444.850     | -14.820 | -26.011 | 4.52137     | 1.33516     | 4.46224         | 3.9787                    | 5.2027                |  |
| 20800    | 20821 | 444.494     | -15.176 | -26.209 | 4.50225     | 1.32954     | 4.44347         | 3.9652                    | 5.1850                |  |
| 20900    | 20921 | 444.137     | -15.533 | -26.407 | 4.48340     | 1.32395     | 4.42477         | 3.9517                    | 5.1673                |  |
| 21000    | 21021 | 443.781     | -15.889 | -26.605 | 4.46451 + 2 | 1.31837 + 1 | 4.40613 - 1     | 3.9382 - 2                | 5.1497 - 1            |  |
| 21100    | 21121 | 443.424     | -16.246 | -26.803 | 4.44568     | 1.31261     | 4.38758         | 3.9247                    | 5.1321                |  |
| 21200    | 21222 | 442.967     | -16.603 | -27.001 | 4.42692     | 1.30727     | 4.36904         | 3.9113                    | 5.1145                |  |
| 21300    | 21322 | 442.711     | -16.959 | -27.200 | 4.40823     | 1.30175     | 4.35058         | 3.8979                    | 5.0970                |  |
| 21400    | 21422 | 442.354     | -17.316 | -27.398 | 4.38960     | 1.29605     | 4.33220         | 3.8846                    | 5.0796                |  |
| 21500    | 21522 | 441.998     | -17.672 | -27.596 | 4.37103     | 1.29076     | 4.31387         | 3.8713                    | 5.0622                |  |
| 21600    | 21622 | 441.641     | -18.029 | -27.794 | 4.35233     | 1.28530     | 4.29561         | 3.8589                    | 5.0448                |  |
| 21700    | 21722 | 441.284     | -18.386 | -27.992 | 4.33408     | 1.27985     | 4.27741         | 3.8448                    | 5.0275                |  |
| 21800    | 21822 | 440.928     | -18.742 | -28.190 | 4.31571     | 1.27443     | 4.25987         | 3.8316                    | 5.0102                |  |
| 21900    | 21922 | 440.571     | -19.099 | -28.388 | 4.29739     | 1.26893     | 4.24129         | 3.8184                    | 4.9830                |  |
| 22000    | 22023 | 440.214     | -19.456 | -28.586 | 4.27914 + 2 | 1.26383 + 1 | 4.22319 - 1     | 3.8053 - 2                | 4.9758 - 1            |  |
| 22100    | 22123 | 439.858     | -19.812 | -28.785 | 4.26086     | 1.25826     | 4.20524         | 3.7921                    | 4.9687                |  |
| 22200    | 22224 | 439.501     | -20.160 | -28.983 | 4.24223     | 1.25291     | 4.18735         | 3.7791                    | 4.9416                |  |
| 22300    | 22324 | 439.145     | -20.523 | -29.181 | 4.22477     | 1.24757     | 4.16982         | 3.7660                    | 4.9246                |  |
| 22400    | 22424 | 438.788     | -20.882 | -29.379 | 4.20677     | 1.24226     | 4.15176         | 3.7530                    | 4.9076                |  |
| 22500    | 22524 | 438.431     | -21.239 | -29.577 | 4.18863     | 1.23696     | 4.13405         | 3.7401                    | 4.8906                |  |
| 22600    | 22625 | 438.075     | -21.595 | -29.775 | 4.17085     | 1.23168     | 4.11641         | 3.7271                    | 4.8737                |  |
| 22700    | 22725 | 437.718     | -21.952 | -29.973 | 4.15314     | 1.22642     | 4.09893         | 3.7143                    | 4.8569                |  |
| 22800    | 22825 | 437.362     | -22.308 | -30.171 | 4.13538     | 1.22118     | 4.08131         | 3.7014                    | 4.8400                |  |
| 22900    | 22925 | 437.005     | -22.665 | -30.369 | 4.11789     | 1.21595     | 4.06394         | 3.6898                    | 4.8223                |  |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mb       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 2000     | 2000  | 438.448     | -22.022 | -30.568 | 4.10006 + 2 | 121075 + 1  | 4.04445 - 1     | 1.6758 - 2                | 4.8085 - 1            |
| 2100     | 2128  | 438.393     | -21.578 | -30.786 | 4.05249     | 120556      | 4.02911         | 1.6630                    | 4.7899                |
| 2200     | 2256  | 438.338     | -21.113 | -30.954 | 4.03423     | 120038      | 4.01123         | 1.6503                    | 4.7732                |
| 2300     | 2384  | 438.278     | -20.740 | -31.122 | 4.02154     | 119524      | 3.97451         | 1.6376                    | 4.7565                |
| 2400     | 2512  | 438.218     | -20.448 | -31.280 | 4.01015     | 119010      | 3.97745         | 1.6249                    | 4.7401                |
| 2500     | 2637  | 438.155     | -20.805 | -31.353 | 4.01222     | 118499      | 3.98405         | 1.6123                    | 4.7236                |
| 2600     | 2762  | 438.090     | -21.161 | -31.758 | 3.98556     | 117989      | 3.94331         | 1.5997                    | 4.7071                |
| 2700     | 2877  | 438.152     | -21.518 | -31.984 | 3.97635     | 117481      | 3.92633         | 1.5872                    | 4.6907                |
| 2800     | 2992  | 438.198     | -21.875 | -32.153 | 3.96121     | 116974      | 3.90841         | 1.5748                    | 4.6743                |
| 2900     | 3107  | 438.243     | -22.231 | -32.361 | 3.94412     | 116470      | 3.89255         | 1.5622                    | 4.6580                |
| 3000     | 3223  | 438.282     | -22.588 | -32.549 | 3.92710 + 2 | 115967 + 1  | 3.87574 - 1     | 1.5497 - 2                | 4.6417 - 1            |
| 3100     | 3428  | 438.228     | -23.944 | -32.747 | 3.91013     | 115466      | 3.86000         | 1.5373                    | 4.6254                |
| 3200     | 3428  | 438.169     | -27.301 | -32.945 | 3.88322     | 114967      | 3.84231         | 1.5249                    | 4.6092                |
| 3300     | 3428  | 438.112     | -27.558 | -33.143 | 3.87637     | 114469      | 3.82568         | 1.5125                    | 4.5931                |
| 3400     | 3428  | 438.055     | -28.014 | -33.341 | 3.86959     | 113974      | 3.80912         | 1.5002                    | 4.5770                |
| 3500     | 3428  | 438.000     | -28.371 | -33.539 | 3.84286     | 113480      | 3.79280         | 1.4879                    | 4.5609                |
| 3600     | 3428  | 438.042     | -28.728 | -33.738 | 3.82619     | 112987      | 3.77615         | 1.4757                    | 4.5449                |
| 3700     | 3428  | 438.085     | -29.084 | -33.936 | 3.80957     | 112497      | 3.75976         | 1.4634                    | 4.5289                |
| 3800     | 3430  | 438.123     | -29.441 | -34.134 | 3.79302     | 112008      | 3.74342         | 1.4512                    | 4.5129                |
| 3900     | 3430  | 438.163     | -29.797 | -34.332 | 3.77652     | 111521      | 3.72714         | 1.4391                    | 4.4970                |
| 4000     | 3430  | 438.203     | -30.154 | -34.530 | 3.76009 + 2 | 111035 + 1  | 3.71092 - 1     | 3.4270 - 2                | 4.4812 - 1            |
| 4100     | 3530  | 429.150     | -30.511 | -34.728 | 3.74371     | 110552      | 3.69475         | 3.4149                    | 4.4654                |
| 4200     | 3530  | 428.903     | -30.867 | -34.926 | 3.72739     | 110070      | 3.67864         | 3.4028                    | 4.4496                |
| 4300     | 3531  | 428.446     | -31.224 | -35.124 | 3.71112     | 109590      | 3.66259         | 3.3908                    | 4.4339                |
| 4400     | 3531  | 428.090     | -31.580 | -35.322 | 3.69492     | 109111      | 3.64680         | 3.3788                    | 4.4182                |
| 4500     | 3531  | 427.733     | -31.937 | -35.521 | 3.67877     | 108634      | 3.63066         | 3.3669                    | 4.4025                |
| 4600     | 3531  | 427.376     | -32.294 | -35.719 | 3.66267     | 108159      | 3.61478         | 3.3549                    | 4.3869                |
| 4700     | 3532  | 427.020     | -32.650 | -35.917 | 3.64644     | 107665      | 3.59895         | 3.3430                    | 4.3714                |
| 4800     | 3532  | 426.563     | -33.007 | -36.115 | 3.63066     | 107213      | 3.58319         | 3.3311                    | 4.3559                |
| 4900     | 3532  | 426.306     | -33.364 | -36.313 | 3.61474     | 106743      | 3.56747         | 3.3193                    | 4.3404                |
| 5000     | 3632  | 425.916     | -33.720 | -36.511 | 3.59888 + 2 | 106275 + 1  | 3.55181 - 1     | 3.3075 - 2                | 4.2750 - 1            |
| 5100     | 3632  | 425.553     | -34.077 | -36.709 | 3.58307     | 105808      | 3.53621         | 3.2957                    | 4.2696                |
| 5200     | 3633  | 425.237     | -34.433 | -36.907 | 3.56732     | 105343      | 3.52067         | 3.2840                    | 4.2542                |
| 5300     | 3633  | 424.900     | -34.790 | -37.108 | 3.55162     | 104879      | 3.50518         | 3.2723                    | 4.2389                |
| 5400     | 3633  | 424.523     | -35.147 | -37.304 | 3.53598     | 104417      | 3.48974         | 3.2605                    | 4.2237                |
| 5500     | 3634  | 424.167     | -35.503 | -37.502 | 3.52040     | 103957      | 3.47438         | 3.2490                    | 4.2084                |
| 5600     | 3634  | 423.816     | -35.860 | -37.700 | 3.50487     | 103499      | 3.45904         | 3.2374                    | 4.1933                |
| 5700     | 3634  | 423.454     | -36.216 | -37.898 | 3.48940     | 103042      | 3.44377         | 3.2258                    | 4.1781                |
| 5800     | 3634  | 423.097     | -36.573 | -38.086 | 3.47398     | 102587      | 3.42855         | 3.2142                    | 4.2030                |
| 5900     | 3635  | 422.740     | -36.930 | -38.284 | 3.45862     | 102133      | 3.41339         | 3.2027                    | 4.1880                |
| 6000     | 37035 | 422.384     | -37.286 | -38.492 | 3.44331 + 2 | 101681 + 1  | 3.39888 - 1     | 3.1912 - 2                | 4.1730 - 1            |
| 6100     | 37135 | 422.027     | -37.643 | -38.691 | 3.42805     | 101230      | 3.38323         | 3.1798                    | 4.1580                |
| 6200     | 37235 | 421.670     | -38.000 | -38.889 | 3.41206     | 100782      | 3.36823         | 3.1684                    | 4.1430                |
| 6300     | 37335 | 421.314     | -38.356 | -39.087 | 3.39772     | 100335      | 3.35329         | 3.1570                    | 4.1282                |
| 6400     | 37435 | 420.957     | -38.713 | -39.285 | 3.38283     | 9.98889 + 0 | 3.33839         | 3.1456                    | 4.1133                |
| 6500     | 37536 | 420.601     | -39.069 | -39.483 | 3.36759     | 9.994450    | 3.32356         | 3.1343                    | 4.0985                |
| 6600     | 37637 | 420.244     | -39.426 | -39.681 | 3.35261     | 9.99026     | 3.30877         | 3.1230                    | 4.0837                |
| 6700     | 37737 | 419.887     | -39.783 | -39.879 | 3.33769     | 9.98619     | 3.29404         | 3.1117                    | 4.0690                |
| 6800     | 37837 | 419.531     | -40.139 | -40.077 | 3.32281     | 9.98127     | 3.27936         | 3.1005                    | 4.0543                |
| 6900     | 37937 | 419.174     | -40.496 | -40.275 | 3.30800     | 9.76851     | 3.26474         | 3.0883                    | 4.0397                |
| 7000     | 38038 | 418.818     | -40.852 | -40.474 | 3.28323 + 2 | 9.72491 + 0 | 3.25017 - 1     | 3.0781 - 2                | 4.0251 - 1            |
| 7100     | 38138 | 418.461     | -41.209 | -40.672 | 3.27852     | 9.68147     | 3.23585         | 3.0670                    | 4.0105                |
| 7200     | 38238 | 418.104     | -41.566 | -40.970 | 3.26386     | 9.63818     | 3.22118         | 3.0559                    | 3.9960                |
| 7300     | 38338 | 417.748     | -41.922 | -41.068 | 3.24926     | 9.59505     | 3.20677         | 3.0448                    | 3.9815                |
| 7400     | 38439 | 417.391     | -42.279 | -41.286 | 3.23470     | 9.55208     | 3.19241         | 3.0338                    | 3.9670                |
| 7500     | 38539 | 417.034     | -42.636 | -41.464 | 3.22021     | 9.50925     | 3.17810         | 3.0227                    | 3.9526                |
| 7600     | 38639 | 416.678     | -42.992 | -41.682 | 3.20576     | 9.46660     | 3.16384         | 3.0118                    | 3.9383                |
| 7700     | 38740 | 416.321     | -43.349 | -41.860 | 3.19136     | 9.42410     | 3.14963         | 3.0008                    | 3.9239                |
| 7800     | 38840 | 415.965     | -43.705 | -42.059 | 3.17702     | 9.38174     | 3.13548         | 2.9899                    | 3.9097                |
| 7900     | 38940 | 415.608     | -44.062 | -42.257 | 3.16273     | 9.33955     | 3.12138         | 2.9790                    | 3.8854                |
| 8000     | 39040 | 415.251     | -44.419 | -42.455 | 3.14850 + 2 | 9.29750 + 0 | 3.10732 - 1     | 2.9681 - 2                | 3.8612 - 1            |
| 8100     | 39141 | 414.896     | -44.775 | -42.653 | 3.13431     | 9.25561     | 3.08332         | 2.9573                    | 3.8570                |
| 8200     | 39241 | 414.538     | -45.132 | -42.851 | 3.12018     | 9.21388     | 3.07937         | 2.94465                   | 3.8429                |
| 8300     | 39341 | 414.182     | -45.488 | -43.049 | 3.10608     | 9.17729     | 3.06848         | 3.0357                    | 3.8338                |
| 8400     | 39442 | 413.825     | -45.845 | -43.247 | 3.09206     | 9.13086     | 3.05183         | 3.0250                    | 3.8248                |
| 8500     | 39442 | 413.468     | -46.202 | -43.445 | 3.07808     | 9.08958     | 3.03783         | 3.0143                    | 3.8108                |
| 8600     | 39442 | 413.112     | -46.556 | -43.644 | 3.06416     | 9.04845     | 3.02409         | 3.0036                    | 3.7968                |
| 8700     | 39442 | 412.755     | -46.915 | -43.843 | 3.05028     | 9.00747     | 3.01038         | 2.9892                    | 3.7829                |
| 8800     | 39443 | 412.398     | -47.272 | -44.040 | 3.03645     | 9.96665     | 2.99675         | 2.9823                    | 3.7690                |
| 8900     | 39443 | 412.042     | -47.628 | -44.238 | 3.02298     | 9.92507     | 2.98315         | 2.9717                    | 3.7551                |
| 9000     | 39443 | 411.685     | -47.985 | -44.436 | 3.00885 + 2 | 9.88544 + 0 | 2.96661 - 1     | 2.9611 - 2                | 3.7413 - 1            |
| 9100     | 39444 | 411.329     | -48.341 | -44.634 | 2.99528     | 9.84508     | 2.95611         | 2.9506                    | 3.7275                |
| 9200     | 39444 | 410.972     | -48.696 | -44.832 | 2.98166     | 9.80463     | 2.94267         | 2.9401                    | 3.7138                |
| 9300     | 39444 | 410.615     | -49.055 | -45.030 | 2.96808     | 9.76475     | 2.92927         | 2.9294                    | 3.7001                |
| 9400     | 39444 | 410.259     | -49.411 | -45.228 | 2.95454     | 9.72481     | 2.91582         | 2.9192                    | 3.6866                |
| 9500     | 39445 | 409.902     | -49.768 | -45.427 | 2.94109     | 9.68502     | 2.90263         | 2.9086                    | 3.6728                |
| 9600     | 39445 | 409.545     | -50.124 | -45.625 | 2.92766     | 9.64538     | 2.89838         | 2.7984                    | 3.6593                |
| 9700     | 39745 | 409.189     | -50.481 | -45.823 | 2.91429     | 9.60589     | 2.87618         | 2.7880                    | 3.6457                |
| 9800     | 39844 | 408.832     | -50.838 | -46.021 | 2.89996     | 9.56654     | 2.86303         | 2.7777                    | 3.6322                |
| 9900     | 39844 | 408.476     | -51.194 | -46.219 | 2.88769     | 9.52734     | 2.84903         | 2.7674                    | 3.6108                |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 31000    | 31046 | 408.119     | -51.551 | -46.417 | 2.87446 + 2 | 2.88229 + 0 | 2.83687 - 1     | 2.7571 - 2                | 1.6053 - 1            |
| 31100    | 31146 | 407.782     | -51.508 | -46.515 | 2.86125     | 2.84429     | 2.82387         | 2.7489                    | 1.5919                |
| 31200    | 31247 | 407.405     | -51.454 | -46.613 | 2.84616     | 2.81191     | 2.77257         | 2.7257                    | 1.5785                |
| 31300    | 31347 | 407.049     | -51.621 | -47.012 | 2.82534     | 2.77149     | 2.79461         | 2.7265                    | 1.5613                |
| 31400    | 31447 | 406.693     | -52.977 | -47.210 | 2.80206     | 2.73521     | 2.78215         | 2.7164                    | 1.5527                |
| 31500    | 31548 | 406.136     | -53.334 | -47.408 | 2.78007     | 2.69517     | 2.77223         | 2.7062                    | 1.5398                |
| 31600    | 31648 | 405.979     | -53.891 | -47.806 | 2.75813     | 2.65506     | 2.75987         | 2.6961                    | 1.5256                |
| 31700    | 31748 | 405.623     | -54.047 | -47.804 | 2.73825     | 2.61883     | 2.74085         | 2.6861                    | 1.5124                |
| 31800    | 31849 | 405.266     | -54.404 | -48.002 | 2.70741     | 2.51812     | 2.73418         | 2.6760                    | 1.4983                |
| 31900    | 31949 | 404.909     | -54.761 | -48.200 | 2.75762     | 2.41438     | 2.72156         | 2.6660                    | 1.4862                |
| 32000    | 32049 | 404.553     | -55.117 | -48.398 | 2.74486 + 2 | 2.10563 + 0 | 2.70899 - 1     | 2.6561 - 2                | 1.4731 - 1            |
| 32100    | 32149 | 404.198     | -55.474 | -48.597 | 2.73219     | 2.06815     | 2.69846         | 2.6461                    | 1.4601                |
| 32200    | 32249 | 403.840     | -55.830 | -48.795 | 2.71954     | 2.03081     | 2.68398         | 2.6362                    | 1.4472                |
| 32300    | 32349 | 403.483     | -56.187 | -48.983 | 2.70894     | 1.98380     | 2.67155         | 2.6283                    | 1.4342                |
| 32400    | 32450 | 403.126     | -56.544 | -49.191 | 2.69439     | 1.95654     | 2.65916         | 2.6164                    | 1.4213                |
| 32500    | 32551 | 402.770     | -56.900 | -49.389 | 2.68189     | 1.91961     | 2.64662         | 2.6063                    | 1.4085                |
| 32600    | 32651 | 402.413     | -57.257 | -49.587 | 2.66943     | 1.88283     | 2.63452         | 2.5968                    | 1.3956                |
| 32700    | 32751 | 402.057     | -57.613 | -49.785 | 2.65702     | 1.84618     | 2.62228         | 2.5870                    | 1.3828                |
| 32800    | 32852 | 401.700     | -57.970 | -49.983 | 2.64466     | 1.80987     | 2.61008         | 2.5773                    | 1.3701                |
| 32900    | 32952 | 401.343     | -58.327 | -50.181 | 2.63224     | 1.77330     | 2.59792         | 2.5675                    | 1.3574                |
| 33000    | 33052 | 400.987     | -58.683 | -50.380 | 2.62007 + 2 | 1.73707 + 0 | 2.58581 - 1     | 2.5578 - 2                | 1.3447 - 1            |
| 33100    | 33153 | 400.630     | -59.040 | -50.578 | 2.60785     | 1.70007     | 2.57375         | 2.5482                    | 1.3321                |
| 33200    | 33253 | 400.273     | -59.397 | -50.776 | 2.59567     | 1.66501     | 2.56173         | 2.5385                    | 1.3195                |
| 33300    | 33353 | 399.917     | -59.753 | -50.974 | 2.58354     | 1.62919     | 2.54975         | 2.5289                    | 1.3069                |
| 33400    | 33454 | 399.560     | -60.110 | -51.172 | 2.57145     | 1.59350     | 2.53783         | 2.5193                    | 1.2944                |
| 33500    | 33554 | 399.204     | -60.466 | -51.370 | 2.55941     | 1.55794     | 2.52594         | 2.5098                    | 1.2819                |
| 33600    | 33654 | 398.847     | -60.823 | -51.568 | 2.54742     | 1.52253     | 2.51411         | 2.5003                    | 1.2694                |
| 33700    | 33755 | 398.490     | -61.180 | -51.766 | 2.53547     | 1.48724     | 2.50232         | 2.4908                    | 1.2570                |
| 33800    | 33855 | 398.134     | -61.536 | -51.965 | 2.52357     | 1.45209     | 2.49057         | 2.4813                    | 1.2446                |
| 33900    | 33955 | 397.777     | -61.893 | -52.163 | 2.51171     | 1.41708     | 2.47887         | 2.4718                    | 1.2322                |
| 34000    | 34056 | 397.421     | -62.249 | -52.361 | 2.49990 + 2 | 1.38219 + 0 | 2.46721 - 1     | 2.4624 - 2                | 1.2199 - 1            |
| 34100    | 34156 | 397.064     | -62.606 | -52.559 | 2.48813     | 1.34744     | 2.45559         | 2.4530                    | 1.2077                |
| 34200    | 34256 | 396.707     | -62.963 | -52.757 | 2.47641     | 1.31283     | 2.44402         | 2.4437                    | 1.1954                |
| 34300    | 34357 | 396.351     | -63.319 | -52.955 | 2.46473     | 1.27854     | 2.43250         | 2.4343                    | 1.1832                |
| 34400    | 34457 | 395.994     | -63.676 | -53.153 | 2.45310     | 1.24399     | 2.42102         | 2.4250                    | 1.1710                |
| 34500    | 34557 | 395.637     | -64.033 | -53.351 | 2.44151     | 1.20977     | 2.40958         | 2.4157                    | 1.1598                |
| 34600    | 34658 | 395.281     | -64.389 | -53.550 | 2.42996     | 1.17568     | 2.39819         | 2.4065                    | 1.1468                |
| 34700    | 34758 | 394.924     | -64.746 | -53.748 | 2.41846     | 1.14172     | 2.38684         | 2.3973                    | 1.1347                |
| 34800    | 34858 | 394.568     | -65.102 | -53.946 | 2.40701     | 1.10788     | 2.37553         | 2.3881                    | 1.1227                |
| 34900    | 34959 | 394.211     | -65.459 | -54.144 | 2.39559     | 1.07419     | 2.36427         | 2.3789                    | 1.1107                |
| 35000    | 35059 | 393.854     | -65.816 | -54.342 | 2.38423 + 2 | 1.04082 + 0 | 2.35305 - 1     | 2.3687 - 2                | 1.0987 - 1            |
| 35200    | 35260 | 393.141     | -65.529 | -54.738 | 2.36162     | 1.67786     | 2.33074         | 2.3515                    | 1.0749                |
| 35400    | 35460 | 392.428     | -67.242 | -56.134 | 2.33819     | 1.60782     | 2.30860         | 2.3334                    | 1.0513                |
| 35600    | 35661 | 391.715     | -67.955 | -56.531 | 2.31683     | 1.54189     | 2.28663         | 2.3154                    | 1.0277                |
| 35800    | 35862 | 391.001     | -68.669 | -56.927 | 2.29484     | 1.47787     | 2.26483         | 2.2975                    | 1.0043                |
| 36000    | 36062 | 390.288     | -69.382 | -56.323 | 2.27293     | 1.41195     | 2.24320         | 2.2798                    | 2.9811                |
| 36200    | 36262 | 389.970     | -69.700 | -56.500 | 2.25119     | 1.36475     | 2.22175         | 2.2598                    | 2.9550                |
| 36400    | 36464 | 389.970     | -69.700 | -56.500 | 2.22985     | 1.35845     | 2.20046         | 2.2382                    | 2.9267                |
| 36600    | 36664 | 389.970     | -69.700 | -56.500 | 2.20832     | 1.32116     | 2.17944         | 2.2168                    | 2.8987                |
| 36800    | 36865 | 389.970     | -69.700 | -56.500 | 2.18719     | 1.35878     | 2.15889         | 2.1956                    | 2.8710                |
| 37000    | 37065 | 389.970     | -69.700 | -56.500 | 2.16627 + 2 | 1.33689 + 0 | 2.13794 - 1     | 2.1744 - 2                | 2.8435 - 1            |
| 37200    | 37265 | 389.970     | -69.700 | -56.500 | 2.14505     | 1.30379     | 2.11749         | 2.1538                    | 2.8163                |
| 37400    | 37467 | 389.970     | -69.700 | -56.500 | 2.12502     | 1.27518     | 2.08723         | 2.1332                    | 2.7894                |
| 37600    | 37668 | 389.970     | -69.700 | -56.500 | 2.10469     | 1.25151     | 2.07717         | 2.1127                    | 2.7627                |
| 37800    | 37869 | 389.970     | -69.700 | -56.500 | 2.08456     | 1.21558     | 2.06730         | 2.0925                    | 2.7363                |
| 38000    | 38069 | 389.970     | -69.700 | -56.500 | 2.06441     | 1.19680     | 2.03761         | 2.0725                    | 2.7101                |
| 38200    | 38270 | 389.970     | -69.700 | -56.500 | 2.04436     | 1.16347     | 2.01812         | 2.0527                    | 2.6842                |
| 38400    | 38471 | 389.970     | -69.700 | -56.500 | 2.02530     | 1.13671     | 1.99882         | 2.0330                    | 2.6585                |
| 38600    | 38672 | 389.970     | -69.700 | -56.500 | 2.00592     | 1.09246     | 1.97949         | 2.0138                    | 2.6330                |
| 38800    | 38872 | 389.970     | -69.700 | -56.500 | 1.98673     | 1.04682     | 1.96075         | 1.9943                    | 2.6079                |
| 39000    | 39073 | 389.970     | -69.700 | -56.500 | 1.96773 + 2 | 1.01070 + 0 | 1.94200 - 1     | 1.9753 - 2                | 2.5829 - 1            |
| 39200    | 39274 | 389.970     | -69.700 | -56.500 | 1.94880     | 1.07511     | 1.92342         | 1.9544                    | 2.5582                |
| 39400    | 39475 | 389.970     | -69.700 | -56.500 | 1.92985     | 1.04005     | 1.90502         | 1.9376                    | 2.5337                |
| 39600    | 39675 | 389.970     | -69.700 | -56.500 | 1.91179     | 1.00482     | 1.88679         | 1.9191                    | 2.5095                |
| 39800    | 39876 | 389.970     | -69.700 | -56.500 | 1.89350     | 1.06151     | 1.86874         | 1.9007                    | 2.4865                |
| 40000    | 40077 | 389.970     | -69.700 | -56.500 | 1.87530     | 1.02802     | 1.85086         | 1.8826                    | 2.4617                |
| 40200    | 40278 | 389.970     | -69.700 | -56.500 | 1.85745     | 1.00504     | 1.83316         | 1.8646                    | 2.4381                |
| 40400    | 40478 | 389.970     | -69.700 | -56.500 | 1.83866     | 1.04257     | 1.81582         | 1.8467                    | 2.4148                |
| 40600    | 40679 | 389.970     | -69.700 | -56.500 | 1.82008     | 1.00000     | 1.79825         | 1.8291                    | 2.3917                |
| 40800    | 40880 | 389.970     | -69.700 | -56.500 | 1.80145     | 1.03291     | 1.78105         | 1.8118                    | 2.3688                |
| 41000    | 41081 | 389.970     | -69.700 | -56.500 | 1.78738 + 2 | 1.02784 + 0 | 1.76401 - 1     | 1.7943 - 2                | 2.3462 - 1            |
| 41200    | 41282 | 389.970     | -69.700 | -56.500 | 1.77028     | 1.02276     | 1.74713         | 1.7771                    | 2.3227                |
| 41400    | 41482 | 389.970     | -69.700 | -56.500 | 1.75335     | 1.01763     | 1.73042         | 1.7601                    | 2.3015                |
| 41600    | 41683 | 389.970     | -69.700 | -56.500 | 1.73687     | 1.01216     | 1.71387         | 1.7432                    | 2.2795                |
| 41800    | 41884 | 389.970     | -69.700 | -56.500 | 1.71985     | 1.00704     | 1.69747         | 1.7285                    | 2.2577                |
| 42000    | 42085 | 389.970     | -69.700 | -56.500 | 1.70351     | 1.00205     | 1.68123         | 1.7100                    | 2.2361                |
| 42200    | 42286 | 389.970     | -69.700 | -56.500 | 1.68721     | 1.00223     | 1.66815         | 1.6937                    | 2.2147                |
| 42400    | 42486 | 389.970     | -69.700 | -56.500 | 1.67107     | 1.00446     | 1.64882         | 1.6775                    | 2.1935                |
| 42600    | 42687 | 389.970     | -69.700 | -56.500 | 1.65508     | 1.00746     | 1.63344         | 1.6614                    | 2.1725                |
| 42800    | 42888 | 389.970     | -69.700 | -56.500 | 1.63805     | 1.00407     | 1.61781         | 1.6485                    | 2.1517                |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |  |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|--|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |  |
| 43000    | 43069 | 389.970     | -69.700 | -56.500 | 1.62237 + 2 | 4.78439 + 0 | 1.60234 - 1     | 1.62208 - 2               | 2.13111 - 1           |  |
| 42000    | 42390 | 389.970     | -69.700 | -56.500 | 1.60003     | 4.74882     | 1.58701         | 1.61442                   | 2.1108                |  |
| 41400    | 43491 | 389.970     | -69.700 | -56.500 | 1.58205     | 4.70510     | 1.57102         | 1.59867                   | 2.0806                |  |
| 41200    | 43791 | 389.970     | -69.700 | -56.500 | 1.57741     | 4.66810     | 1.56479         | 1.59336                   | 2.0708                |  |
| 41000    | 44091 | 389.970     | -69.700 | -56.500 | 1.57222     | 4.63134     | 1.56100         | 1.58863                   | 2.0508                |  |
| 40800    | 44391 | 389.970     | -69.700 | -56.500 | 1.56736     | 4.59411     | 1.55714         | 1.58333                   | 2.0311                |  |
| 40600    | 44691 | 389.970     | -69.700 | -56.500 | 1.56257     | 4.55898     | 1.55253         | 1.57984                   | 2.0117                |  |
| 40400    | 44991 | 389.970     | -69.700 | -56.500 | 1.55791     | 4.52386     | 1.54898         | 1.57527                   | 1.9925                |  |
| 40200    | 45291 | 389.970     | -69.700 | -56.500 | 1.55339     | 4.48861     | 1.54573         | 1.57091                   | 1.9734                |  |
| 40000    | 45591 | 389.970     | -69.700 | -56.500 | 1.54881     | 4.45344     | 1.54264         | 1.56647                   | 1.9545                |  |
| 40000    | 45891 | 389.970     | -69.700 | -56.500 | 1.54476     | 4.41820     | 1.53948 - 1     | 1.48004 - 2               | 1.93538 - 1           |  |
| 40000    | 46191 | 389.970     | -69.700 | -56.500 | 1.54086     | 4.31332     | 1.54416         | 1.46662                   | 1.9173                |  |
| 40000    | 46491 | 389.970     | -69.700 | -56.500 | 1.53695     | 4.27205     | 1.54277         | 1.45222                   | 1.8990                |  |
| 40000    | 46791 | 389.970     | -69.700 | -56.500 | 1.53304     | 4.23118     | 1.54141         | 1.43893                   | 1.8808                |  |
| 40000    | 47091 | 389.970     | -69.700 | -56.500 | 1.52914     | 4.19070     | 1.54005         | 1.42466                   | 1.8628                |  |
| 40000    | 47391 | 389.970     | -69.700 | -56.500 | 1.52524     | 4.15061     | 1.53719         | 1.41098                   | 1.8450                |  |
| 40000    | 47691 | 389.970     | -69.700 | -56.500 | 1.52131     | 4.11081     | 1.53791         | 1.3974                    | 1.8273                |  |
| 40000    | 47991 | 389.970     | -69.700 | -56.500 | 1.51739     | 4.07158     | 1.53676         | 1.38641                   | 1.8099                |  |
| 40000    | 48291 | 389.970     | -69.700 | -56.500 | 1.51350     | 4.03283     | 1.53475         | 1.3708                    | 1.7925                |  |
| 40000    | 48591 | 389.970     | -69.700 | -56.500 | 1.50954     | 3.99405     | 1.53277         | 1.3577                    | 1.7754                |  |
| 47000    | 47105 | 389.970     | -69.700 | -56.500 | 1.33980 + 2 | 3.95584 + 0 | 1.32208 - 1     | 1.34447 - 2               | 1.7584 - 1            |  |
| 47200    | 47307 | 389.970     | -69.700 | -56.500 | 1.32679     | 3.91800     | 1.30944         | 1.33119                   | 1.7416                |  |
| 47400    | 47508 | 389.970     | -69.700 | -56.500 | 1.31409     | 3.88051     | 1.30691         | 1.31191                   | 1.7249                |  |
| 47600    | 47709 | 389.970     | -69.700 | -56.500 | 1.30152     | 3.84339     | 1.28450         | 1.30865                   | 1.7084                |  |
| 47800    | 47910 | 389.970     | -69.700 | -56.500 | 1.28907     | 3.80662     | 1.27721         | 1.2940                    | 1.6821                |  |
| 48000    | 48111 | 389.970     | -69.700 | -56.500 | 1.27674     | 3.77020     | 1.26804         | 1.2816                    | 1.6759                |  |
| 48200    | 48312 | 389.970     | -69.700 | -56.500 | 1.26452     | 3.73414     | 1.24799         | 1.2694                    | 1.6599                |  |
| 48400    | 48513 | 389.970     | -69.700 | -56.500 | 1.25243     | 3.69841     | 1.23605         | 1.2572                    | 1.6440                |  |
| 48600    | 48714 | 389.970     | -69.700 | -56.500 | 1.24044     | 3.66303     | 1.22422         | 1.2452                    | 1.6282                |  |
| 48800    | 48914 | 389.970     | -69.700 | -56.500 | 1.22854     | 3.62799     | 1.21251         | 1.2333                    | 1.6127                |  |
| 49000    | 49115 | 389.970     | -69.700 | -56.500 | 1.21662 + 2 | 3.59328 + 0 | 1.20091 - 1     | 1.2215 - 2                | 1.5972 - 1            |  |
| 49200    | 49316 | 389.970     | -69.700 | -56.500 | 1.20518     | 3.55591     | 1.19842         | 1.2098                    | 1.5820                |  |
| 49400    | 49517 | 389.970     | -69.700 | -56.500 | 1.19365     | 3.52486     | 1.17806         | 1.1982                    | 1.5668                |  |
| 49600    | 49718 | 389.970     | -69.700 | -56.500 | 1.18223     | 3.49114     | 1.16678         | 1.1868                    | 1.5518                |  |
| 49800    | 49919 | 389.970     | -69.700 | -56.500 | 1.17092     | 3.45774     | 1.15561         | 1.1754                    | 1.5370                |  |
| 50000    | 50120 | 389.970     | -69.700 | -56.500 | 1.15972     | 3.42466     | 1.14456         | 1.1642                    | 1.5223                |  |
| 50200    | 50321 | 389.970     | -69.700 | -56.500 | 1.14863     | 3.39190     | 1.13361         | 1.1530                    | 1.5077                |  |
| 50400    | 50522 | 389.970     | -69.700 | -56.500 | 1.13764     | 3.35945     | 1.12276         | 1.1420                    | 1.4933                |  |
| 50600    | 50723 | 389.970     | -69.700 | -56.500 | 1.12676     | 3.32731     | 1.11202         | 1.1311                    | 1.4790                |  |
| 50800    | 50924 | 389.970     | -69.700 | -56.500 | 1.11568     | 3.29548     | 1.10138         | 1.1202                    | 1.4649                |  |
| 51000    | 51125 | 389.970     | -69.700 | -56.500 | 1.10530 + 2 | 3.26396 + 0 | 1.08085 - 1     | 1.1086 - 2                | 1.4509 - 1            |  |
| 51200    | 51326 | 389.970     | -69.700 | -56.500 | 1.08947     | 3.22373     | 1.06041         | 1.08869                   | 1.4370                |  |
| 51400    | 51527 | 389.970     | -69.700 | -56.500 | 1.07425     | 3.20180     | 1.07006         | 1.08844                   | 1.4232                |  |
| 51600    | 51728 | 389.970     | -69.700 | -56.500 | 1.07388     | 3.17117     | 1.05984         | 1.07850                   | 1.4096                |  |
| 51800    | 51929 | 389.970     | -69.700 | -56.500 | 1.06361     | 3.14063     | 1.04970         | 1.0677                    | 1.3961                |  |
| 52000    | 52130 | 389.970     | -69.700 | -56.500 | 1.05343     | 3.11079     | 1.03966         | 1.0575                    | 1.3828                |  |
| 52200    | 52331 | 389.970     | -69.700 | -56.500 | 1.04336     | 3.08103     | 1.02971         | 1.0473                    | 1.3695                |  |
| 52400    | 52532 | 389.970     | -69.700 | -56.500 | 1.03337     | 3.05155     | 1.01986         | 1.0373                    | 1.3564                |  |
| 52600    | 52733 | 389.970     | -69.700 | -56.500 | 1.02348     | 3.02236     | 1.01010         | 1.0274                    | 1.3435                |  |
| 52800    | 52934 | 389.970     | -69.700 | -56.500 | 1.01370     | 2.99344     | 1.00044         | 1.0176                    | 1.3306                |  |
| 53000    | 53135 | 389.970     | -69.700 | -56.500 | 1.00400 + 2 | 2.96461 + 0 | 9.90570 - 2     | 1.00778 - 2               | 1.3179 - 1            |  |
| 53200    | 53336 | 389.970     | -69.700 | -56.500 | 9.94394 + 1 | 2.93644     | 9.81380         | 9.98220 - 3               | 1.3053                |  |
| 53400    | 53537 | 389.970     | -69.700 | -56.500 | 9.88481     | 2.90835     | 9.72002         | 9.88665                   | 1.2928                |  |
| 53600    | 53738 | 389.970     | -69.700 | -56.500 | 9.75459     | 2.88053     | 9.62703         | 9.7919                    | 1.2804                |  |
| 53800    | 53939 | 389.970     | -69.700 | -56.500 | 9.66127     | 2.85297     | 9.53463         | 9.68662                   | 1.2682                |  |
| 54000    | 54140 | 389.970     | -69.700 | -56.500 | 9.56884     | 2.82568     | 9.44371         | 9.6055                    | 1.2560                |  |
| 54200    | 54341 | 389.970     | -69.700 | -56.500 | 9.47730     | 2.79865     | 9.35337         | 9.5136                    | 1.2440                |  |
| 54400    | 54542 | 389.970     | -69.700 | -56.500 | 9.38664     | 2.77137     | 9.26389         | 9.4226                    | 1.2321                |  |
| 54600    | 54743 | 389.970     | -69.700 | -56.500 | 9.29684     | 2.74535     | 9.17526         | 9.3324                    | 1.2203                |  |
| 54800    | 54944 | 389.970     | -69.700 | -56.500 | 9.20790     | 2.71909     | 9.08749         | 9.2431                    | 1.2087                |  |
| 55000    | 55145 | 389.970     | -69.700 | -56.500 | 9.11981 + 1 | 2.68308 + 0 | 9.00055 - 2     | 9.1547 - 3                | 1.1971 - 1            |  |
| 55200    | 55347 | 389.970     | -69.700 | -56.500 | 9.03256     | 2.65731     | 8.91445         | 9.0671                    | 1.1856                |  |
| 55400    | 55548 | 389.970     | -69.700 | -56.500 | 8.94465     | 2.63162     | 8.82917         | 8.9204                    | 1.1743                |  |
| 55600    | 55749 | 389.970     | -69.700 | -56.500 | 8.86067     | 2.60592     | 8.74670         | 8.8045                    | 1.1631                |  |
| 55800    | 55950 | 389.970     | -69.700 | -56.500 | 8.77580     | 2.59140     | 8.66104         | 8.6964                    | 1.1519                |  |
| 56000    | 56151 | 389.970     | -69.700 | -56.500 | 8.69185     | 2.56650     | 8.57819         | 8.7251                    | 1.1408                |  |
| 56200    | 56352 | 389.970     | -69.700 | -56.500 | 8.60869     | 2.54215     | 8.49612         | 8.6416                    | 1.1300                |  |
| 56400    | 56553 | 389.970     | -69.700 | -56.500 | 8.52634     | 2.51783     | 8.41484         | 8.5560                    | 1.1192                |  |
| 56600    | 56754 | 389.970     | -69.700 | -56.500 | 8.44477     | 2.49074     | 8.33434         | 8.4771                    | 1.1085                |  |
| 56800    | 56855 | 389.970     | -69.700 | -56.500 | 8.36398     | 2.46398     | 8.25461         | 8.3966                    | 1.0979                |  |
| 57000    | 57156 | 389.970     | -69.700 | -56.500 | 8.28397 + 1 | 2.44625 + 0 | 8.17564 - 2     | 8.3157 - 3                | 1.0874 - 1            |  |
| 57200    | 57357 | 389.970     | -69.700 | -56.500 | 8.20472     | 2.42226     | 8.09743         | 8.2261                    | 1.0770                |  |
| 57400    | 57558 | 389.970     | -69.700 | -56.500 | 8.12622     | 2.39967     | 8.01396         | 8.1573                    | 1.0667                |  |
| 57600    | 57760 | 389.970     | -69.700 | -56.500 | 8.04848     | 2.37762     | 7.94324         | 8.0793                    | 1.0565                |  |
| 57800    | 57961 | 389.970     | -69.700 | -56.500 | 7.97149     | 2.35398     | 7.86725         | 8.0020                    | 1.0464                |  |
| 58000    | 58162 | 389.970     | -69.700 | -56.500 | 7.89623     | 2.33146     | 7.79198         | 7.9254                    | 1.0364                |  |
| 58200    | 58363 | 389.970     | -69.700 | -56.500 | 7.81970     | 2.30916     | 7.71744         | 7.8498                    | 1.0264                |  |
| 58400    | 58564 | 389.970     | -69.700 | -56.500 | 7.74488     | 2.28705     | 7.64381         | 7.7745                    | 1.0166                |  |
| 58600    | 58765 | 389.970     | -69.700 | -56.500 | 7.67080     | 2.26519     | 7.57049         | 7.7001                    | 1.0069                |  |
| 58800    | 58966 | 389.970     | -69.700 | -56.500 | 7.59741     | 2.24351     | 7.49806         | 7.6265                    | 9.9726 - 2            |  |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 59000    | 59167 | 389.970     | -68.700 | -54.500 | 7.52473 + 1 | 2.22205 + 0 | 7.42633 - 2     | 7.56335 - 3               | 9.8772 - 2            |
| 59200    | 59238 | 389.970     | -68.700 | -54.500 | 7.45274     | 2.20079     | 7.35529         | 7.46113                   | 9.7827                |
| 59400    | 59277 | 389.970     | -68.700 | -54.500 | 7.38145     | 2.17774     | 7.28462         | 7.4337                    | 9.6771                |
| 59600    | 59316 | 389.970     | -68.700 | -54.500 | 7.31033     | 2.15563     | 7.21372         | 7.3765                    | 9.5514                |
| 59800    | 59355 | 389.970     | -68.700 | -54.500 | 7.24069     | 2.13353     | 7.14460         | 7.2595                    | 9.5044                |
| 60000    | 60173 | 389.970     | -68.700 | -54.500 | 7.17162     | 2.11178     | 7.07784         | 7.1901                    | 9.4137                |
| 60200    | 60274 | 389.970     | -68.700 | -54.500 | 7.10301     | 2.08752     | 7.01013         | 7.1382                    | 9.3237                |
| 60400    | 60375 | 389.970     | -68.700 | -54.500 | 7.03508     | 2.07746     | 6.94308         | 7.0830                    | 9.2345                |
| 60600    | 60777 | 389.970     | -68.700 | -54.500 | 6.96776     | 2.06758     | 6.87864         | 6.9844                    | 9.1461                |
| 60800    | 60878 | 389.970     | -68.700 | -54.500 | 6.90110     | 2.05789     | 6.81086         | 6.8275                    | 9.0586                |
| 61000    | 61179 | 389.970     | -68.700 | -54.500 | 6.83508 + 1 | 2.01840 + 0 | 6.74570 - 2     | 6.86112 - 3               | 6.9720 - 2            |
| 61200    | 61380 | 389.970     | -68.700 | -54.500 | 6.76949     | 1.98609     | 6.68116         | 6.7866                    | 6.8861                |
| 61400    | 61581 | 389.970     | -68.700 | -54.500 | 6.70463     | 1.95598     | 6.61725         | 6.7306                    | 6.8011                |
| 61600    | 61783 | 389.970     | -68.700 | -54.500 | 6.64078     | 1.92102     | 6.55394         | 6.6862                    | 6.7169                |
| 61800    | 61904 | 389.970     | -68.700 | -54.500 | 6.57725     | 1.89226     | 6.49124         | 6.6024                    | 6.6335                |
| 62000    | 62185 | 389.970     | -68.700 | -54.500 | 6.51433     | 1.85388     | 6.42914         | 6.5393                    | 6.5509                |
| 62200    | 62386 | 389.970     | -68.700 | -54.500 | 6.45201     | 1.80528     | 6.36764         | 6.4767                    | 6.4691                |
| 62400    | 62587 | 389.970     | -68.700 | -54.500 | 6.39029     | 1.78705     | 6.30672         | 6.4147                    | 6.3881                |
| 62600    | 62788 | 389.970     | -68.700 | -54.500 | 6.32915     | 1.76800     | 6.24639         | 6.3534                    | 6.3079                |
| 62800    | 62900 | 389.970     | -68.700 | -54.500 | 6.26880     | 1.75112     | 6.18883         | 6.2926                    | 6.2284                |
| 63000    | 63191 | 389.970     | -68.700 | -54.500 | 6.20864 + 1 | 1.68341 + 0 | 6.12745 - 2     | 6.2224 - 3                | 6.1497 - 2            |
| 63200    | 63392 | 389.970     | -68.700 | -54.500 | 6.14824     | 1.65187     | 6.06883         | 6.1728                    | 6.0717                |
| 63400    | 63593 | 389.970     | -68.700 | -54.500 | 6.08041     | 1.79840     | 6.01077         | 6.1127                    | 7.9945                |
| 63600    | 63795 | 389.970     | -68.700 | -54.500 | 6.03215     | 1.78129     | 5.96327         | 6.0652                    | 7.9180                |
| 63800    | 63996 | 389.970     | -68.700 | -54.500 | 5.97444     | 1.76425     | 5.89631         | 5.9973                    | 7.8422                |
| 64000    | 64197 | 389.970     | -68.700 | -54.500 | 5.91728     | 1.74727     | 5.83991         | 5.9399                    | 7.7672                |
| 64200    | 64398 | 389.970     | -68.700 | -54.500 | 5.86088     | 1.73086     | 5.78404         | 5.8831                    | 7.6929                |
| 64400    | 64600 | 389.970     | -68.700 | -54.500 | 5.80461     | 1.71410     | 5.72870         | 5.8208                    | 7.6193                |
| 64600    | 64801 | 389.970     | -68.700 | -54.500 | 5.74908     | 1.69770     | 5.67350         | 5.7711                    | 7.5464                |
| 64800    | 65002 | 389.970     | -68.700 | -54.500 | 5.68948     | 1.68146     | 5.61982         | 5.7159                    | 7.4742                |
| 65000    | 65203 | 389.970     | -68.700 | -54.500 | 5.63381 + 1 | 1.66537 + 0 | 5.56586 - 2     | 5.6612 - 3                | 7.4027 - 2            |
| 65200    | 65404 | 389.970     | -68.700 | -54.500 | 5.58585     | 1.64944     | 5.51261         | 5.6070                    | 7.3319                |
| 65400    | 65608 | 389.970     | -68.700 | -54.500 | 5.53222     | 1.63266     | 5.45867         | 5.5534                    | 7.2618                |
| 65600    | 65807 | 389.970     | -68.700 | -54.500 | 5.47929     | 1.61803     | 5.40784         | 5.5003                    | 7.1923                |
| 65800    | 66008 | 390.071     | -68.599 | -54.444 | 5.42688     | 1.60256     | 5.35591         | 5.4462                    | 7.1217                |
| 66000    | 66210 | 390.180     | -68.490 | -54.383 | 5.37496     | 1.58723     | 5.30470         | 5.3926                    | 7.0516                |
| 66200    | 66411 | 390.280     | -68.380 | -54.322 | 5.32380     | 1.57206     | 5.25399         | 5.3396                    | 6.9822                |
| 66400    | 66612 | 390.400     | -68.270 | -54.261 | 5.27272     | 1.55703     | 5.20377         | 5.2871                    | 6.9135                |
| 66600    | 66813 | 390.508     | -68.161 | -54.200 | 5.22234     | 1.54216     | 5.15405         | 5.2251                    | 6.8455                |
| 66800    | 67015 | 390.619     | -68.051 | -54.139 | 5.17245     | 1.53742     | 5.10481         | 5.1838                    | 6.7783                |
| 67000    | 67216 | 390.729     | -68.941 | -54.078 | 5.12208 + 1 | 1.51284 + 0 | 5.06806 - 2     | 5.1327 - 3                | 6.7116 - 2            |
| 67200    | 67417 | 390.838     | -68.831 | -54.017 | 5.07415     | 1.49640     | 5.00780         | 5.0823                    | 6.6457                |
| 67400    | 67619 | 390.948     | -68.722 | -53.956 | 5.02572     | 1.48410     | 4.98000         | 5.0323                    | 6.5804                |
| 67600    | 67820 | 391.058     | -68.612 | -53.896 | 4.97777     | 1.46894     | 4.91268         | 4.9829                    | 6.5158                |
| 67800    | 68021 | 391.168     | -68.502 | -53.835 | 4.93029     | 1.45391     | 4.85581         | 4.9240                    | 6.4518                |
| 68000    | 68222 | 391.278     | -68.392 | -53.774 | 4.88327     | 1.44203     | 4.81941         | 4.8856                    | 6.3885                |
| 68200    | 68424 | 391.387     | -68.283 | -53.713 | 4.83672     | 1.42828     | 4.77347         | 4.8376                    | 6.3258                |
| 68400    | 68625 | 391.497     | -68.173 | -53.652 | 4.79002     | 1.41467     | 4.72798         | 4.7902                    | 6.2638                |
| 68600    | 68826 | 391.607     | -68.063 | -53.591 | 4.74487     | 1.39919     | 4.68233         | 4.7432                    | 6.2024                |
| 68800    | 69028 | 391.716     | -67.954 | -53.530 | 4.69978     | 1.38784     | 4.63832         | 4.6967                    | 6.1416                |
| 69000    | 69229 | 391.826     | -67.844 | -53.468 | 4.65302 + 1 | 1.37463 + 0 | 4.59415 - 2     | 4.65014 - 3               | 6.0814 - 2            |
| 69200    | 69430 | 391.936     | -67.734 | -53.408 | 4.61070     | 1.36154     | 4.50501         | 5.0218                    |                       |
| 69400    | 69632 | 392.046     | -67.624 | -53.347 | 4.56882     | 1.34886     | 4.50710         | 4.5600                    | 5.9628                |
| 69600    | 69833 | 392.155     | -67.515 | -53.286 | 4.52337     | 1.33575     | 4.46422         | 4.5154                    | 5.9044                |
| 69800    | 70034 | 392.265     | -67.405 | -53.225 | 4.48034     | 1.32204     | 4.42175         | 4.4712                    | 5.8466                |
| 70000    | 70236 | 392.375     | -67.295 | -53.164 | 4.43773     | 1.31046     | 4.37970         | 4.4274                    | 5.7894                |
| 70200    | 70437 | 392.485     | -67.185 | -53.103 | 4.39555     | 1.29800     | 4.33807         | 4.3841                    | 5.7328                |
| 70400    | 70638 | 392.594     | -67.076 | -53.042 | 4.35377     | 1.28567     | 4.29684         | 4.3412                    | 5.6767                |
| 70600    | 70840 | 392.704     | -66.966 | -52.981 | 4.31240     | 1.27345     | 4.25601         | 4.2988                    | 5.6212                |
| 70800    | 71041 | 392.814     | -66.856 | -52.920 | 4.27144     | 1.26135     | 4.21558         | 4.2567                    | 5.5662                |
| 71000    | 71243 | 392.923     | -66.747 | -52.859 | 4.23087 + 1 | 1.24938 + 0 | 4.17555 - 2     | 4.2151 - 3                | 5.5118 - 2            |
| 71200    | 71444 | 393.033     | -66.637 | -52.798 | 4.19070     | 1.22751     | 4.13560         | 4.1740                    | 5.4580                |
| 71400    | 71645 | 393.143     | -66.527 | -52.737 | 4.15083     | 1.20577     | 4.08665         | 4.1332                    | 5.4047                |
| 71600    | 71847 | 393.253     | -66.417 | -52.676 | 4.11155     | 1.18414     | 4.05778         | 4.0828                    | 5.3519                |
| 71800    | 72048 | 393.362     | -66.308 | -52.615 | 4.07254     | 1.16282     | 4.01769         | 4.0529                    | 5.2997                |
| 72000    | 72249 | 393.472     | -66.198 | -52.554 | 4.03382     | 1.14122     | 3.98117         | 4.0133                    | 5.2479                |
| 72200    | 72451 | 393.582     | -66.088 | -52.493 | 3.99483     | 1.11982     | 3.94343         | 3.9742                    | 5.1967                |
| 72400    | 72652 | 393.692     | -65.978 | -52.432 | 3.95781     | 1.09874     | 3.90805         | 3.9354                    | 5.1460                |
| 72600    | 72854 | 393.801     | -65.868 | -52.372 | 3.92031     | 1.07767     | 3.87004         | 3.8970                    | 5.0959                |
| 72800    | 73055 | 393.911     | -65.758 | -52.311 | 3.88517     | 1.04670     | 3.83229         | 3.8566                    | 5.0462                |
| 73000    | 73256 | 394.021     | -65.649 | -52.250 | 3.84640 + 1 | 1.01384 + 0 | 3.79458 - 2     | 3.8214 - 3                | 4.9970 - 2            |
| 73200    | 73458 | 394.130     | -65.540 | -52.189 | 3.80988     | 1.02309     | 3.76016         | 3.7842                    | 4.9483                |
| 73400    | 73659 | 394.240     | -65.430 | -52.128 | 3.77392     | 1.01444     | 3.72457         | 3.7473                    | 4.9001                |
| 73600    | 73861 | 394.350     | -65.320 | -52.067 | 3.73621     | 1.00389     | 3.69187         | 3.7108                    | 4.8624                |
| 73800    | 74062 | 394.460     | -65.210 | -52.006 | 3.70285     | 1.00345     | 3.65643         | 3.6747                    | 4.8052                |
| 74000    | 74264 | 394.569     | -65.101 | -51.945 | 3.66783     | 1.00311     | 3.62187         | 3.6388                    | 4.7584                |
| 74200    | 74465 | 394.679     | -64.991 | -51.884 | 3.63315     | 1.00287     | 3.59554         | 3.6035                    | 4.7121                |
| 74400    | 74666 | 394.788     | -64.981 | -51.823 | 3.59981     | 1.00273     | 3.56175         | 3.5685                    | 4.6663                |
| 74600    | 74868 | 394.899     | -64.971 | -51.762 | 3.56481     | 1.00268     | 3.53189         | 3.5338                    | 4.6209                |
| 74800    | 75009 | 395.008     | -64.962 | -51.701 | 3.53113     | 1.00274     | 3.49494         | 3.4994                    | 4.5760                |

**GEOPOTENTIAL ALTITUDE, ENGLISH UNITS**

| ALTITUDE |       | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|-------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 73000    | 73271 | 395.118     | -44.563 | -51.040 | 1.06779 + 1 | 1.03390 - 0 | 1.45205 - 2     | 1.46554 - 3               | 4.5315 - 2            |
| 73200    | 73472 | 395.226     | -44.443 | -51.579 | 1.06478     | 1.02714     | 1.41945         | 1.43118                   | 4.4875                |
| 73400    | 73674 | 395.227     | -44.233 | -51.518 | 1.02506     | 1.01249     | 1.37718         | 1.3984                    | 4.4439                |
| 73600    | 73875 | 395.157     | -44.023 | -51.457 | 1.02127     | 1.00771     | 1.37121         | 1.3755                    | 4.4007                |
| 73800    | 74076 | 395.067     | -43.803 | -51.396 | 1.01730     | 1.00291     | 1.36537         | 1.3558                    | 4.3558                |
| 74000    | 74278 | 395.078     | -43.584 | -51.335 | 1.02284     | 1.00874     | 1.36202         | 1.3304                    | 4.3157                |
| 74200    | 74479 | 395.088     | -43.364 | -51.274 | 1.02048     | 1.00767     | 1.35118         | 1.3084                    | 4.2738                |
| 74400    | 74681 | 395.098     | -43.144 | -51.213 | 1.01735     | 1.00648     | 1.32044         | 1.2387                    | 4.2334                |
| 74600    | 74882 | 395.098     | -42.924 | -51.152 | 1.02400     | 1.01740     | 1.29009         | 1.2083                    | 4.1913                |
| 74800    | 75084 | 394.108     | -42.704 | -51.091 | 1.01108     | 1.00808     | 1.26886         | 1.1743                    | 4.1507                |
| 75000    | 75285 | 394.215     | -42.485 | -51.030 | 1.11816 + 1 | 1.10629 - 1 | 1.14001 - 2     | 1.1434 - 3                | 4.1105 - 2            |
| 75200    | 75487 | 394.125     | -42.265 | -50.969 | 1.11516     | 1.10082     | 1.11044         | 1.1130                    | 4.0708                |
| 75400    | 75688 | 394.035     | -42.045 | -50.908 | 1.12198     | 1.09232     | 1.08116         | 1.0828                    | 4.0312                |
| 75600    | 75890 | 394.044     | -41.825 | -50.848 | 1.08261     | 1.08248     | 1.06217         | 1.0630                    | 3.9922                |
| 75800    | 76091 | 394.054     | -41.605 | -50.787 | 1.08382     | 1.04666     | 1.02245         | 1.0234                    | 3.9535                |
| 76000    | 76293 | 394.064     | -41.385 | -50.726 | 1.03671     | 1.06148     | 1.09502         | 1.0942                    | 1.9153                |
| 76200    | 76494 | 394.074     | -41.165 | -50.665 | 1.00617     | 1.07722     | 1.06086         | 1.0642                    | 1.8774                |
| 76400    | 76696 | 394.083     | -40.945 | -50.604 | 2.97791     | 1.79377     | 1.03387         | 1.0365                    | 1.8399                |
| 76600    | 76897 | 397.093     | -42.577 | -52.543 | 2.94983     | 1.71114     | 2.91136         | 2.9081                    | 1.8027                |
| 76800    | 77099 | 397.203     | -42.457 | -52.482 | 2.92222     | 1.66301     | 2.88400         | 2.8800                    | 1.7660                |
| 77000    | 77300 | 397.313     | -42.337 | -52.421 | 2.88477 + 1 | 1.54426 - 1 | 2.85682 - 2     | 2.8521 - 3                | 1.7296 - 2            |
| 77200    | 77502 | 397.422     | -42.216 | -52.360 | 2.86759     | 1.64679     | 2.83008         | 2.8246                    | 1.6935                |
| 77400    | 77703 | 397.532     | -42.095 | -52.299 | 2.84067     | 1.58651     | 2.80353         | 2.7973                    | 1.6578                |
| 77600    | 77905 | 397.642     | -41.975 | -52.238 | 2.81402     | 1.50979     | 2.77722         | 2.7703                    | 1.6225                |
| 77800    | 80107 | 397.751     | -61.919 | -52.177 | 2.78762     | 1.52113     | 2.75116         | 2.7435                    | 1.5875                |
| 80000    | 80308 | 397.861     | -61.859 | -52.116 | 2.76147     | 1.51462     | 2.72536         | 2.7171                    | 1.5529                |
| 80200    | 80510 | 397.971     | -61.799 | -52.055 | 2.73558     | 1.50781     | 2.69980         | 2.6908                    | 1.5186                |
| 80400    | 80711 | 398.081     | -61.589 | -51.994 | 2.70983     | 1.60243     | 2.67450         | 2.6649                    | 1.4847                |
| 80600    | 80913 | 398.190     | -61.460 | -51.933 | 2.68454     | 1.72744     | 2.64943         | 2.6392                    | 1.4511                |
| 80800    | 81114 | 398.300     | -61.370 | -51.872 | 2.65639     | 1.78337     | 2.62461         | 2.6137                    | 1.4178                |
| 81000    | 81316 | 398.410     | -61.280 | -51.811 | 2.63446 + 1 | 1.77992 - 1 | 2.60003 - 2     | 2.58885 - 3               | 1.3849 - 2            |
| 81200    | 81517 | 398.520     | -61.150 | -51.750 | 2.60961     | 1.70977     | 2.57568         | 2.5638                    | 1.3522                |
| 81400    | 81719 | 398.629     | -61.041 | -51.689 | 2.58538     | 1.74343     | 2.55157         | 2.5389                    | 1.3199                |
| 81600    | 81921 | 398.739     | -60.931 | -51.628 | 2.56118     | 1.75317     | 2.52769         | 2.5144                    | 1.2880                |
| 81800    | 82122 | 398.849     | -60.821 | -51.567 | 2.53722     | 1.76941     | 2.50404         | 2.4902                    | 1.2563                |
| 82000    | 82224 | 398.958     | -60.712 | -51.508 | 2.51349     | 1.74223     | 2.48082         | 2.4663                    | 1.2250                |
| 82200    | 82525 | 399.068     | -60.602 | -51.445 | 2.48999     | 1.73233     | 2.45743         | 2.4425                    | 1.1939                |
| 82400    | 82727 | 399.178     | -60.492 | -51.384 | 2.46671     | 1.72419     | 2.43445         | 2.4190                    | 1.1632                |
| 82600    | 82928 | 399.288     | -60.382 | -51.324 | 2.44366     | 1.71612     | 2.41170         | 2.3958                    | 1.1323                |
| 82800    | 83130 | 399.397     | -60.273 | -51.263 | 2.42083     | 1.70470     | 2.38917         | 2.3727                    | 1.1027                |
| 83000    | 83332 | 399.507     | -60.163 | -51.202 | 2.39681 + 1 | 1.68182 - 1 | 2.36485 - 2     | 2.3498 - 3                | 1.0728 - 2            |
| 83200    | 83533 | 399.617     | -60.053 | -51.141 | 2.37582     | 1.70159     | 2.34475         | 2.3273                    | 1.0433                |
| 83400    | 83735 | 399.727     | -59.943 | -51.080 | 2.35384     | 1.69529     | 2.32286         | 2.3050                    | 1.0141                |
| 83600    | 83937 | 399.836     | -59.834 | -51.019 | 2.33167     | 1.68543     | 2.30118         | 2.2828                    | 9.9651                |
| 83800    | 84138 | 399.946     | -59.724 | -50.958 | 2.30982     | 1.67219     | 2.27971         | 2.2609                    | 9.9564                |
| 84000    | 84340 | 400.056     | -59.614 | -50.897 | 2.28637     | 1.67576     | 2.25845         | 2.2392                    | 9.9281                |
| 84200    | 84541 | 400.165     | -59.505 | -50.836 | 2.26703     | 1.66454     | 2.23739         | 2.2177                    | 9.9000                |
| 84400    | 84743 | 400.275     | -59.395 | -50.775 | 2.24593     | 1.65323     | 2.21663         | 2.1964                    | 2.8721                |
| 84600    | 84945 | 400.385     | -59.285 | -50.714 | 2.22486     | 1.65031     | 2.19867         | 2.1754                    | 2.8446                |
| 84800    | 85146 | 400.495     | -59.175 | -50.653 | 2.20423     | 1.65010     | 2.17561         | 2.1545                    | 2.8173                |
| 85000    | 85348 | 400.604     | -59.066 | -50.582 | 2.18370 + 1 | 1.64446 - 1 | 2.15514 - 2     | 2.1339 - 3                | 2.7903 - 2            |
| 85200    | 85550 | 400.714     | -58.956 | -50.531 | 2.16338     | 1.63841     | 2.13507         | 2.1134                    | 2.7636                |
| 85400    | 85751 | 400.824     | -58.846 | -50.470 | 2.14322     | 1.62983     | 2.11520         | 2.0832                    | 2.7371                |
| 85600    | 85953 | 400.934     | -58.736 | -50.409 | 2.12227     | 1.62703     | 2.08651         | 2.0731                    | 2.7109                |
| 85800    | 86154 | 401.043     | -58.627 | -50.348 | 2.10352     | 1.62169     | 2.07601         | 2.0533                    | 2.6849                |
| 86000    | 86356 | 401.153     | -58.517 | -50.287 | 2.08385     | 1.61539     | 2.05670         | 2.0336                    | 2.6592                |
| 86200    | 86558 | 401.263     | -58.407 | -50.226 | 2.06457     | 1.60967     | 2.03757         | 2.0141                    | 2.6338                |
| 86400    | 86759 | 401.372     | -58.298 | -50.165 | 2.04538     | 1.60399     | 2.01863         | 1.9849                    | 2.6086                |
| 86600    | 86961 | 401.482     | -58.188 | -50.104 | 2.02636     | 1.59635     | 1.99967         | 1.9758                    | 2.5836                |
| 86800    | 87163 | 401.592     | -58.078 | -50.043 | 2.00753     | 1.59284     | 1.98128         | 1.9569                    | 2.5589                |
| 87000    | 87364 | 401.702     | -57.968 | -49.982 | 1.98688 + 1 | 1.58731 - 1 | 1.96388 - 2     | 1.9382 - 3                | 2.5344 - 2            |
| 87200    | 87566 | 401.811     | -57.859 | -49.921 | 1.97041     | 1.58182     | 1.94465         | 1.9197                    | 2.5102                |
| 87400    | 87768 | 401.921     | -57.748 | -49.860 | 1.95212     | 1.57440     | 1.92889         | 1.9013                    | 2.4862                |
| 87600    | 87970 | 402.031     | -57.639 | -49.799 | 1.93400     | 1.57108     | 1.90971         | 1.8832                    | 2.4625                |
| 87800    | 88171 | 402.141     | -57.529 | -49.739 | 1.91605     | 1.56500     | 1.89089         | 1.8652                    | 2.4390                |
| 88000    | 88373 | 402.250     | -57.420 | -49.678 | 1.89826     | 1.55950     | 1.87345         | 1.8474                    | 2.4157                |
| 88200    | 88575 | 402.360     | -57.310 | -49.617 | 1.88087     | 1.55361     | 1.85608         | 1.8287                    | 2.3926                |
| 88400    | 88776 | 402.470     | -57.200 | -49.556 | 1.86323     | 1.54822     | 1.83887         | 1.8123                    | 2.3698                |
| 88600    | 88978 | 402.579     | -57.080 | -49.495 | 1.84596     | 1.54112     | 1.80182         | 1.7860                    | 2.3472                |
| 88800    | 89180 | 402.689     | -56.961 | -49.434 | 1.82865     | 1.54008     | 1.80484         | 1.7779                    | 2.3248                |
| 89000    | 89381 | 402.799     | -56.871 | -49.373 | 1.81191 + 1 | 1.53306 - 1 | 1.78822 - 2     | 1.7609 - 3                | 2.3026 - 2            |
| 89200    | 89583 | 402.909     | -56.761 | -49.312 | 1.79613     | 1.53010     | 1.77165         | 1.7441                    | 2.2807                |
| 89400    | 89785 | 403.018     | -56.652 | -49.251 | 1.77850     | 1.52512     | 1.75525         | 1.7275                    | 2.2589                |
| 89600    | 89987 | 403.128     | -56.542 | -49.190 | 1.76204     | 1.52030     | 1.73900         | 1.7110                    | 2.2374                |
| 89800    | 90188 | 403.238     | -56.432 | -49.129 | 1.74573     | 1.51551     | 1.72291         | 1.6948                    | 2.2161                |
| 90000    | 90389 | 403.348     | -56.322 | -49.068 | 1.72968     | 1.50745     | 1.70886         | 1.6788                    | 2.1950                |
| 90200    | 90582 | 403.457     | -56.213 | -49.007 | 1.71358     | 1.50621     | 1.69118         | 1.6628                    | 2.1741                |
| 90400    | 90794 | 403.567     | -56.103 | -48.946 | 1.69774     | 1.50134     | 1.67554         | 1.6448                    | 2.1534                |
| 90600    | 90995 | 403.677     | -55.993 | -48.885 | 1.68204     | 1.49670     | 1.66006         | 1.6311                    | 2.1329                |
| 90800    | 91197 | 403.787     | -55.883 | -48.824 | 1.66450     | 1.49217     | 1.64471         | 1.6156                    | 2.1127                |

GEOPOTENTIAL ALTITUDE, ENGLISH UNITS

| ALTITUDE |        | TEMPERATURE |         |         | PRESSURE    |             |                 | DENSITY                   |                       |
|----------|--------|-------------|---------|---------|-------------|-------------|-----------------|---------------------------|-----------------------|
| H, FT    | Z, FT  | T, °R       | t, °F   | t, °C   | P, mB       | P, IN. HG   | $\frac{P}{P_0}$ | $\rho, \text{LB FT}^{-3}$ | $\frac{\rho}{\rho_0}$ |
| 91000    | 91399  | 403.953     | -51.774 | -46.763 | 1.66110 + 1 | 4.87370 - 1 | 1.62951 - 2     | 1.6003 - 3                | 2.0926 - 2            |
| 91200    | 91621  | 404.005     | -51.594 | -46.702 | 1.65975     | 4.83744     | 1.61446         | 1.58551                   | 2.0727                |
| 91400    | 91812  | 404.105     | -51.514 | -46.641 | 1.65274     | 4.77125     | 1.58955         | 1.5700                    | 2.0530                |
| 91600    | 92014  | 404.227     | -51.445 | -46.580 | 1.65078     | 4.74187     | 1.58478         | 1.5551                    | 2.0335                |
| 91800    | 92205  | 404.235     | -51.335 | -46.519 | 1.59098     | 4.69510     | 1.57015         | 1.5403                    | 2.0142                |
| 92000    | 92406  | 404.445     | -51.225 | -46.458 | 1.57628     | 4.65475     | 1.55587         | 1.5257                    | 1.9950                |
| 92200    | 92608  | 404.555     | -51.115 | -46.397 | 1.56174     | 4.61182     | 1.54132         | 1.5112                    | 1.9761                |
| 92400    | 92811  | 404.664     | -51.006 | -46.336 | 1.54734     | 4.56928     | 1.52710         | 1.4989                    | 1.9573                |
| 92600    | 93013  | 404.774     | -50.896 | -46.276 | 1.53307     | 4.52716     | 1.51302         | 1.4827                    | 1.9388                |
| 92800    | 93215  | 404.884     | -50.786 | -46.215 | 1.51894     | 4.48543     | 1.49908         | 1.4686                    | 1.9204                |
| 93000    | 93417  | 404.984     | -50.676 | -46.154 | 1.50484 + 1 | 4.44410 - 1 | 1.48536 - 2     | 1.4647 - 3                | 1.9022 - 2            |
| 93200    | 93618  | 405.103     | -50.567 | -46.083 | 1.49108     | 4.40316     | 1.47158         | 1.4409                    | 1.8841                |
| 93400    | 93820  | 405.213     | -50.457 | -46.002 | 1.47735     | 4.36261     | 1.45803         | 1.4272                    | 1.8663                |
| 93600    | 94022  | 405.323     | -50.347 | -45.971 | 1.46375     | 4.32244     | 1.44460         | 1.4137                    | 1.8486                |
| 93800    | 94224  | 405.432     | -50.238 | -45.910 | 1.45027     | 4.28285     | 1.43131         | 1.4003                    | 1.8311                |
| 94000    | 94426  | 405.542     | -50.128 | -45.849 | 1.43683     | 4.24324     | 1.41814         | 1.3870                    | 1.8137                |
| 94200    | 94627  | 405.652     | -50.018 | -45.788 | 1.42371     | 4.20421     | 1.40509         | 1.3739                    | 1.7966                |
| 94400    | 94829  | 405.762     | -50.908 | -47.727 | 1.41061     | 4.16554     | 1.39217         | 1.3609                    | 1.7796                |
| 94600    | 95031  | 405.871     | -53.799 | -47.666 | 1.39764     | 4.12724     | 1.37937         | 1.3480                    | 1.7627                |
| 94800    | 95233  | 405.981     | -53.689 | -47.605 | 1.38479     | 4.08930     | 1.36669         | 1.3353                    | 1.7460                |
| 95000    | 95435  | 406.091     | -53.579 | -47.544 | 1.37207 + 1 | 4.05172 - 1 | 1.35413 - 2     | 1.3226 - 3                | 1.7295 - 2            |
| 95200    | 95637  | 406.201     | -53.469 | -47.483 | 1.35946     | 4.01449     | 1.34169         | 1.3101                    | 1.7132                |
| 95400    | 95838  | 406.310     | -53.360 | -47.422 | 1.34688     | 3.97782     | 1.32938         | 1.2978                    | 1.6970                |
| 95600    | 96040  | 406.420     | -53.250 | -47.361 | 1.33461     | 3.94110     | 1.31716         | 1.2855                    | 1.6809                |
| 95800    | 96242  | 406.530     | -53.140 | -47.300 | 1.32236     | 3.90482     | 1.30506         | 1.2733                    | 1.6651                |
| 96000    | 96444  | 406.639     | -53.031 | -47.239 | 1.31022     | 3.86908     | 1.29308         | 1.2613                    | 1.6493                |
| 96200    | 96646  | 406.749     | -52.921 | -47.178 | 1.29820     | 3.83358     | 1.28122         | 1.2494                    | 1.6338                |
| 96400    | 96848  | 406.859     | -52.811 | -47.117 | 1.28629     | 3.79842     | 1.26947         | 1.2376                    | 1.6183                |
| 96600    | 97050  | 406.969     | -52.701 | -47.056 | 1.27450     | 3.76358     | 1.25783         | 1.2259                    | 1.6031                |
| 96800    | 97251  | 407.078     | -52.592 | -46.995 | 1.26281     | 3.72908     | 1.24630         | 1.2144                    | 1.5879                |
| 97000    | 97453  | 407.188     | -52.482 | -46.934 | 1.25124 + 1 | 3.68490 - 1 | 1.23488 - 2     | 1.2029 - 3                | 1.5730 - 2            |
| 97200    | 97655  | 407.298     | -52.372 | -46.873 | 1.23977     | 3.66105     | 1.22356         | 1.1916                    | 1.5581                |
| 97400    | 97857  | 407.408     | -52.262 | -46.812 | 1.22842     | 3.62751     | 1.21223         | 1.1803                    | 1.5434                |
| 97600    | 98059  | 407.517     | -52.153 | -46.752 | 1.21717     | 3.59429     | 1.20125         | 1.1692                    | 1.5289                |
| 97800    | 98261  | 407.627     | -52.043 | -46.691 | 1.20602     | 3.56138     | 1.19025         | 1.1582                    | 1.5145                |
| 98000    | 98463  | 407.737     | -51.933 | -46.630 | 1.19498     | 3.52879     | 1.17936         | 1.1473                    | 1.5002                |
| 98200    | 98665  | 407.846     | -51.824 | -46.569 | 1.18405     | 3.49650     | 1.16857         | 1.1366                    | 1.4861                |
| 98400    | 98867  | 407.956     | -51.714 | -46.508 | 1.17322     | 3.46451     | 1.15788         | 1.1258                    | 1.4721                |
| 98600    | 99068  | 408.068     | -51.604 | -46.447 | 1.16249     | 3.43283     | 1.14729         | 1.1152                    | 1.4583                |
| 98800    | 99270  | 408.176     | -51.494 | -46.386 | 1.15186     | 3.40144     | 1.13680         | 1.1047                    | 1.4445                |
| 99000    | 99472  | 408.285     | -51.385 | -46.325 | 1.14133 + 1 | 3.37035 - 1 | 1.12641 - 2     | 1.0943 - 3                | 1.4309 - 2            |
| 99200    | 99674  | 408.396     | -51.275 | -46.264 | 1.13080     | 3.33965     | 1.11611         | 1.0840                    | 1.4175                |
| 99400    | 99876  | 408.505     | -51.165 | -46.203 | 1.12057     | 3.30804     | 1.10592         | 1.0738                    | 1.4042                |
| 99600    | 100078 | 408.615     | -51.055 | -46.142 | 1.11034     | 3.27882     | 1.09582         | 1.0637                    | 1.3910                |
| 99800    | 100280 | 408.724     | -50.946 | -46.081 | 1.10020     | 3.24988     | 1.08581         | 1.0537                    | 1.3779                |
| 100000   | 100482 | 408.834     | -50.836 | -46.020 | 1.09015     | 3.21922     | 1.07580         | 1.0438                    | 1.3649                |
| 100200   | 100684 | 408.944     | -50.726 | -45.966 | 1.08000     | 3.18984     | 1.06608         | 1.0340                    | 1.3521                |
| 100400   | 100886 | 408.053     | -50.617 | -45.898 | 1.07005     | 3.15974     | 1.05635         | 1.0243                    | 1.3394                |
| 100600   | 101088 | 408.163     | -50.507 | -45.837 | 1.06000     | 3.13191     | 1.04672         | 1.0147                    | 1.3288                |
| 100800   | 101290 | 408.273     | -50.397 | -45.776 | 1.05002     | 3.10335     | 1.037717        | 1.0062                    | 1.3144                |
| 101000   | 101492 | 409.383     | -50.287 | -45.715 | 1.04133 + 1 | 3.07505 - 1 | 1.02772 - 2     | 9.9575 - 4                | 1.3021 - 2            |
| 101200   | 101694 | 409.492     | -50.178 | -45.654 | 1.03184     | 3.04703     | 1.01835         | 9.9841                    | 1.2899                |
| 101400   | 101895 | 409.602     | -50.068 | -45.593 | 1.02244     | 3.01927     | 1.00907         | 9.7716                    | 1.2778                |
| 101600   | 102097 | 409.712     | -49.958 | -45.532 | 1.01313     | 2.99177     | 9.99881 - 3     | 9.6800                    | 1.2658                |
| 101800   | 102299 | 409.822     | -49.848 | -45.471 | 1.00380     | 2.96453     | 9.90776         | 9.5893                    | 1.2539                |
| 102000   | 102501 | 409.931     | -49.739 | -45.410 | 9.94765 + 0 | 2.93754     | 9.81755         | 9.4995                    | 1.2422                |
| 102200   | 102703 | 410.041     | -49.629 | -45.349 | 9.85708     | 2.91080     | 9.72219         | 9.4105                    | 1.2305                |
| 102400   | 102905 | 410.151     | -49.519 | -45.288 | 9.76741     | 2.88431     | 9.63988         | 9.3224                    | 1.2190                |
| 102600   | 103107 | 410.260     | -49.410 | -45.228 | 9.67856     | 2.85807     | 9.55199         | 9.2351                    | 1.2076                |
| 102800   | 103309 | 410.370     | -49.300 | -45.167 | 9.58953     | 2.83208     | 9.46511         | 9.1486                    | 1.1963                |
| 103000   | 103511 | 410.480     | -49.190 | -45.108 | 9.50333 + 0 | 2.80633 - 1 | 9.37908 - 3     | 9.0630 - 4                | 1.1851 - 2            |
| 103200   | 103713 | 410.590     | -49.080 | -45.045 | 9.41085     | 2.78082     | 9.29300         | 8.9783                    | 1.1740                |
| 103400   | 103915 | 410.699     | -48.971 | -44.984 | 9.33138     | 2.75555     | 9.20805         | 8.8943                    | 1.1630                |
| 103600   | 104117 | 410.808     | -48.861 | -44.923 | 9.24660     | 2.73082     | 9.12809         | 8.8111                    | 1.1522                |
| 103800   | 104319 | 410.919     | -48.751 | -44.862 | 9.16282     | 2.70572     | 9.04280         | 8.7298                    | 1.1414                |
| 104000   | 104521 | 411.029     | -48.641 | -44.801 | 9.07943     | 2.68115     | 8.96070         | 8.6472                    | 1.1307                |
| 104200   | 104723 | 411.138     | -48.532 | -44.740 | 8.98700     | 2.65681     | 8.87935         | 8.5664                    | 1.1202                |
| 104400   | 104925 | 411.248     | -48.422 | -44.679 | 8.91536     | 2.63270     | 8.79877         | 8.4864                    | 1.1087                |
| 104600   | 105127 | 411.358     | -48.312 | -44.618 | 8.83447     | 2.60882     | 8.71885         | 8.4072                    | 1.0983                |
| 104800   | 105329 | 411.467     | -48.203 | -44.557 | 8.75434     | 2.58516     | 8.63886         | 8.3287                    | 1.0891                |
| 105000   | 105531 | 411.580     | -48.080 | -44.499 | 8.67485 + 0 | 2.56171 - 1 | 8.56151 - 3     | 8.2507 - 4                | 1.0789 - 2            |
| 105200   | 105836 | 412.388     | -47.312 | -44.093 | 8.47884     | 2.50430     | 8.38685         | 8.0501                    | 1.0527                |
| 105400   | 106542 | 413.128     | -46.544 | -43.635 | 8.28847     | 2.44788     | 8.18107         | 7.8548                    | 1.0271                |
| 105600   | 107047 | 413.884     | -45.776 | -43.208 | 8.10371     | 2.38393     | 7.98774         | 7.6845                    | 1.0022                |
| 105800   | 107552 | 414.603     | -45.007 | -42.782 | 7.92248     | 2.33880     | 7.81885         | 7.4793                    | 9.7800 - 3            |
| 106000   | 108057 | 415.431     | -44.239 | -42.355 | 7.74557     | 2.28727     | 7.64428         | 7.2887                    | 9.5440                |
| 106200   | 108562 | 416.199     | -43.471 | -41.928 | 7.57285     | 2.23869     | 7.47386         | 7.1229                    | 9.3141                |
| 106400   | 108867 | 416.987     | -42.703 | -41.502 | 7.40469     | 2.18854     | 7.30785         | 6.9816                    | 9.0801                |
| 106600   | 108873 | 417.725     | -41.935 | -41.075 | 7.24007     | 2.13798     | 7.14540         | 6.8747                    | 8.8719                |
| 106800   | 110078 | 418.503     | -41.167 | -40.648 | 7.07989     | 2.08989     | 6.98702         | 6.6222                    | 8.6863                |